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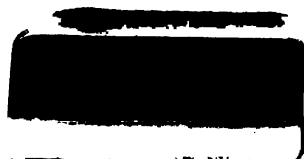
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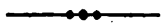
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A M E R I C A N C Y C L O P Æ D I A .



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ARAKTSHEEFF-BEALE.

THE NEW
"
AMERICAN CYCLOPÆDIA:

A
Popular Dictionary
OF
GENERAL KNOWLEDGE.

EDITED BY
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THE NEW AMERICAN CYCLOPÆDIA.

ARAKTSHEEFF

ARAKTSHEEFF, Count, a Russian statesman, born in 1768, died April 21, 1894. His name is deeply interwoven with the history of his country in the present century. Descended from an insignificant and obscure family, he was educated in the military school of St. Petersburg. He entered the artillery, and in this branch of service reached the highest rank. He was one of the favorites of Paul I., and for a short time governor-general of St. Petersburg, but was dismissed on account of the insufferable harshness of his character. Paul made him commander of his favorite regiment of guards at Gatchina, an imperial residence in the environs of the capital. Suspicious of danger, and especially distrustful of Count Pahlen, Paul, the day before his murder, sent an order to Araktsheeff to march with his regiment instantly to the rescue of the emperor. The courier was detained by the conspirators, and Araktsheeff reached the barriers of the capital after the crime was accomplished. Alexander, the successor of Paul, kept Araktsheeff near his person. He was most influential with that emperor during his whole reign, and the only one who remained unshaken in his master's favor. Araktsheeff was active, energetic, but hard, and filled with the utmost contempt toward mankind. The military colonies introduced into Russia under Alexander, were created and organized by Araktsheeff, amid bloodshed and cruelties, and the curses and tears of the Russian people. During the last years of Alexander's reign, Araktsheeff was created a count, and became virtual ruler of the empire. He had in his possession blanks with the imperial signature, and was thus enabled to issue laws and ukases. On Alexander's death he returned these blanks to Nicholas, who sent him in exchange, as relics, a coat and trowsers of the deceased emperor. Soon after, Araktsheeff was ordered to confine his residence to his estates at Gruzina, in the government of Novgorod, where he died the blackest misanthrope. He left his large fortune to a military school founded by him in Gruzina. By one of the clauses of his will he ordered the sum of \$20,000 to be deposited in the bank of

ARAM

St. Petersburg, to serve, with the accumulated interest, as a prize for the best history of the reign of Alexander, 100 years after his death. It is supposed that this part of the will was annulled by the emperor Nicholas.

ARAL, a large inland sea of independent Tartary, between lat. 40° 20' and 47° 0' N. and long. 57° 25' and 61° 0' E. It lies between the steppes of Kirgheez and Khiva. Its elevation is, according to Humboldt, the same as that of the Caspian, of which sea he supposes it to have been a part. From the east, the rivers Sihon, or Jaxartes, Kuwandaria, and Jandaria, flow into it. As these rivers do not furnish a supply of water equal to the amount which evaporates, the lake is thought to be lessening. The Aral is supposed to be very shallow. It abounds in fish. The water is brackish, but is freely drunk by horses, and is used for culinary purposes. Humboldt supposes the Aral to have been an enlargement of the Oxus, now its principal tributary, but formerly a tributary of the Caspian, next to which the Aral covers a larger area than any inland sea in the eastern hemisphere.

ARAM, Eugene, an English scholar, born in 1704 at Ramsgill, in Yorkshire, tried for murder at York, Aug. 8, 1759, found guilty, and executed within 8 days after the trial. The name of his victim was Daniel Clark, a shoemaker of Knaresborough, and the motive of the murder was said to have been plunder. This trial created as great a sensation in Old England, as the trial of Dr. Webster created in New England. Eugene Aram enjoyed a remarkable reputation for extensive scholarship, acquired under the greatest difficulties, his father having been a poor gardener, and no advantages of study and education having been afforded to him but those which he secured for himself by his indefatigable industry, and unswerving perseverance. After his marriage, he established himself as a schoolmaster in his native district of Netherdale. In 1734 he removed his school to Knaresborough, where he remained till 1745, when he became implicated in a robbery committed by Clark, and although discharged for want of evidence, he thought it best to leave the little place, and proceeded to London,

while Clark disappeared mysteriously at the same time, nothing transpiring about him until Feb. 1769, when a skeleton was dug up near Knaresborough, which was suspected to be that of the miserable shoemaker. Aram, in the mean time, while employed as school usher in various towns, and latterly at an academy at Lynn in Norfolk, pursued his favorite studies of heraldry, botany, the Chaldee, Arabic, Welsh, and Irish languages, with his wonted activity, and was just engaged in compiling a comparative lexicon of the English, Latin, Greek, Hebrew, and Celtic languages, when he was suddenly arrested on the charge of murder. It seems that Aram's wife had frequently intimated that he and a man named Houseman were privy to the mystery of Clark's disappearance. Houseman, on being pressed by the coroner, before whom he was immediately taken, testified that Aram and a man named Ferry were the murderers, and that the body had been buried in a particular part of St. Robert's cave, a well-known spot near Knaresborough. The skeleton was discovered in the exact place indicated, and Houseman's conclusive evidence led to Aram's conviction. Aram refused the services of counsel, and conducted his own defence in an elaborate, scholarly, scientific manner, which added to the interest created by this celebrated trial. His defence was an ingenious plea of the general fallibility of circumstantial evidence, especially that connected with the discovery of human bones. He brought together a great many instances to illustrate his argument, and seemed really more carried away by the abstract philosophy of his argument, than impressed by the terrible relation it bore to his fate. After condemnation, he acknowledged his guilt to two clergymen who attended him, but declared that Houseman's share in the murder was larger than he acknowledged. This was also the general impression left on the public mind. Aram declared that he was not instigated to the murder by covetousness, but entirely by jealousy, as he suspected Clark to have made love to his wife. On the night before the execution he attempted suicide, but was discovered before he had bled to death, and his sentence was carried into effect. In this singular man's mind, the most criminal tendencies were set off by a species of intellectual fermentation. Before he attempted suicide he wrote an essay on the subject. He wrote out a sketch of his life, and some poetry. His "Comparative Lexicon" has not been preserved, but passages from the preface are extant. He left a widow and 6 children, 8 sons and 8 daughters. A veil of poetry has been thrown over his fate by Thomas Hood's ballad of "The Dream of Eugene Aram," and by Sir E. Bulwer Lytton's romance of "Eugene Aram." Bulwer states in his preface that "he has exercised the common and fair license of writers of fiction with the facts on which the tale of Eugene Aram is founded." The Eugene Aram pictured by the English novelist, is unmarried, and surrounded with a singular

halo of romance, which occasionally reminds us of Faust, and his wrestlings with science; at other times of Hamlet and his dark introspective broodings; again, of Abelard and his love for Heloise. The English scholar's Heloise is a high-souled Yorkshire girl, Madeline Lester, the genuine daughter of a genuine English country squire, who falls in love with the lofty bearing of the pale, inscrutable scholar, just as Desdemona fell in love with the dashing prowess of the fiery, impulsive Moor. Bulwer says that "the place in which the lovers rested is one which the villagers to this day call 'the Lady's Seat,' for Madeline, whose history is fondly preserved in that district, was afterward wont constantly to repair to that bank." St. Robert's cave, where the bones of the murdered man were found, is to this day eagerly inquired for by visitors to Knaresborough, who, while they walk in the dismal, dreary spot, are powerfully reminded of the concluding stanza of Thomas Hood's ballad on the subject:

That very night, while gentle sleep
The urchin-eyelids kist,
Two stern-faced men set out from Lynn
Through the cold and heavy mist,
And Eugene Aram walked between,
With gyves upon his wrist.

ARAM, ARAMAIC region, in Semitic antiquity, the country between the Mediterranean and the boundaries of Persia and Media on the one side, and Asia Minor or Armenia on the other. It contained Chaldea and Assyria in the east, Syria and Mesopotamia in the west. The ancient Hebrew books give the name of Aram to what is now known as Syria, or Soristan. — ARAMAIC LANGUAGE, spoken anciently in the above-named countries, is the northern branch of the primitive Semitic root. It is divided into the East Aramaic or Chaldean, and the West Aramaic or Syrian. The difference between the two consists in some lexicological peculiarities, and especially in the accentuation of the vowels. They are closely connected dialects.

ARANDA, PEDRO PABLO ABARACA Y BOLEA, count of, a Spanish statesman, descended from an ancient family of Aragon, born at Saragoesa in Dec. 1718, died 1799. In early life he served in the army, but subsequently devoted himself to the civil service, for which he carefully prepared himself by studies at home and travels abroad. After officiating for several years as ambassador of Charles III. at the court of Augustus III. of Poland, he was, on his return to Spain, appointed commander of the army in Portugal. Here he distinguished himself by the capture of Almeida, in Aug. 1762, and by various other exploits, and in token of his eminent services, he was in 1765 appointed military governor of Valencia. In the following year, when a revolution broke out in the capital, the task of quelling it devolved upon Aranda. He was made president of the council of Castile, and soon after prime minister. In this capacity he displayed extraordinary powers of mind, which made his administration a blessing to

Spain. He inaugurated a new municipal system, established schools, provided Madrid with a permanent garrison, strengthened the army and navy, gave a vigorous impetus to the flagging industrial and agricultural interests of the kingdom, and reformed the financial condition of the bank of San Carlos. The wildernesses of the Sierra Morena, infested by wild beasts and brigands, were thrown open to civilization by laborious German, French, and Swiss settlers, who took up their abode there in obedience to Aranda's invitation. The much-abused right of asylum was limited to two churches in the capital of every province. He abolished the religious plays, which, on holy week festivals, generally gave rise to riots. In the ecclesiastical court, he substituted native for papal magistrates. At the same time he established a law which made the sanction of the council of Castile requisite for the validity of the decrees of the Vatican. He went even so far as to lift up his voice against the inquisition, and established a political censorship in order to neutralize its influence. By a decree of April 2, 1767, the Jesuits were expelled from Spain, and their property confiscated. But the hostility of the clerical party soon rendered Aranda's position well-nigh intolerable. Moreover, his confidential correspondence with Voltaire, who, in 1771, had written a strong letter urging him to persevere in his work of reform, was discovered and published. In order to avoid a fatal overthrow, he tendered, in 1778, his resignation as prime minister and accepted the post of ambassador at Paris. Here he became noted for his opposition to England. This had always been the leading feature of his foreign policy, and during the American war, which then absorbed the attention of the European cabinets, he found the long wished for opportunity of giving a deadly blow to British power by prevailing upon Charles III. to join France in supporting the cause of America. In 1788 he had the satisfaction of putting his signature to the treaty of Paris, which recognized the independence of the United States. In 1787 he returned to Spain, but kept aloof from public affairs until 1792, when he was invited to reassume his former position of prime minister as successor of Florida Blanca. But his old master, Charles III., was no more, and under Charles IV. there was little room for a statesman like Aranda. He was met by a camarilla, headed by a worthless queen, bent on his ruin; and after a few months of vain struggles he was forced to surrender the place to the queen's favorite, Godoy. Nominally he remained president of the council, but for all practical purposes his power was at an end. Finally, on occasion of the war with France, he expressed himself against its justice, and this remark was eagerly seized upon as a pretext to send him into exile in Aragon, where he passed the remainder of his life.

ARANJUEZ, a small town in the province of Toledo in Spain, about 26 miles from Madrid.

It is the site of a royal palace of great beauty, whose groves and avenues are the favorite retreat of the monarchs of Spain during the spring months of the year. Philip II. founded it, and it was enlarged and beautified by subsequent monarchs. The residence during the summer is not considered healthy on account of the vapors arising from undrained land in the vicinity. The present queen is particularly partial to Aranjuez.

ARANY, JAKOS, one of the most distinguished Hungarian poets of modern times, born 1819, in Nagy-Szalonta, in the county of Bihar. He is the son of a poor Protestant cultivator of the soil, who educated him for the church. In 1832 he went to the college at Debreczin. He afterward joined a troop of strolling players, and gained some knowledge of the world and of life in this precarious manner. He then returned to Szalonta and supported himself in his native village as a Latin teacher. In 1843 the Kisfaludy society offered a prize for the best popular epic. Arany sent in anonymously his first poem, *As elevenet alkotmany* (the Lost Constitution), which won the prize. In 1847 he sent in to the same society, and under the same anonymous guise, the first part of a trilogy (*Toldi*). The society gave to the author more than the stipulated price, and had it printed at their expense. By the patriotic spirit of his writings, Arany became the darling of young Hungary, and obtained popularity even with the working classes. In Feb. 1848, appeared his *Murany Ostroma* (the Conquest of Murany), which did not excite much attention, in consequence of the Hungarian revolution. The national ministry of Szemere employed him as draughtsman, but he was not prosecuted by the Austrian government on the defeat of the patriots. Since then he has published a narrative poem, *Katalin* (Pesth, 1850), beside many smaller pieces scattered about in the periodical literature of the day. *Toldi*, and the "Conquest of Murany," have been translated from the Magyar into German, by Kertbeny, Leips. 1851.

ARARAT, a celebrated mountain of western Asia, subdivided into 2 peaks, Great Ararat on the N. W. and Little Ararat on the S. E., whose bases blend, while their summits are nearly 7 miles apart. The summit of Great Ararat lies in lat. 39° 42' N., long. 43° 38' E., and is 17,323 feet above the sea level, and 14,820 feet above its base. At a point 8 miles below its summit downward it is constantly covered with snow and ice. Little Ararat rises 18,098 feet above the sea level, and 10,140 feet above the plain on which it stands, and is free from snow and ice in September and October. The 2 mountains are of volcanic character, an eruption having taken place from them as late as July, 1840. The apex of Great Ararat was visited on Oct. 9, 1829. Ararat is the central point of the dividing lines of the division of Armenia, between Russia, Turkey, and Persia.

ARARAT, or PILOT MOUNTAIN, a mountain of North Carolina, in Surrey county, between

the Ararat and Dan rivers. It is of a pyramidal form, and one-third of a mile in height; and its top is a plateau one acre in extent, on which is a gigantic rock 800 feet in height. This summit is seen from a long distance on every side, and used to guide the wanderings of the Indians.

ARARAUMA, a salt lake in Brazil, about 22 miles long and 7 wide. The tide rises in this lake, through its communication with the sea, to a height of 50 feet. It is about 5 miles from the sea, and is longest from east to west, lying parallel to the coast.

ARARIPE, SINA DE, a chain of mountains in Brazil, forming the boundary between the provinces of Ceara and Pernambuco. They are semi-circular in form, and are in about 7° S. lat. and 39° W. long. The city of Orato lies within the semicircle formed by these mountains. They are the source of several considerable rivers.

ARAS, a river of Turkish Armenia, rises in the pashalic of Erzeroom, in lat. 41° 30' N. and long. 41° 10' E.; flows eastward, dividing the territories of Persia and Russia, and joins the Koor in the Russian territory 60 miles west of its fall in the Caspian. Its length is 500 miles.

ARATICA, or CARLSHOFF, one of the Society islands, Panmotu group, Pacific ocean, in lat. 15° 20' S. long. 145° 39' 43" W. It is 8 miles in length by 5 in width.

ARATUS, an old Greek poet, born at Soli in Cilicia, flourished about the year 270 B. C. He was educated under Dionysius Heracleotes, a stoic; the principles of which sect Aratus embraced. He was a friend of Ptolemy Philadelphus, and also of Antigonus Gonatas, king of Macedonia, at whose instigation he composed two poems upon astronomical subjects. One of these, *Phænomena*, described the heavenly bodies and the constellations, giving their names and their movements. The other, *Dioscormia*, described the influence of those bodies upon the atmosphere, and their effects in different situations upon animals, and by these means making prognostics of the weather.—These poems are written with accuracy and general elegance, and comprise most of the astronomical knowledge at that time possessed by the Greeks. Aratus was the author of many other works, both prose and poetry, but none are now extant. He is the poet whom St. Paul quotes in his celebrated speech on Mars hill, Acts xvii. 28. The best edition of his works is by Buhle, Leips. 1801, 2 vols. 8vo.

ARATUS, son of Clinias, born at Sicyon 271 B. C., the man who first made the hitherto insignificant Achæan league a power in Greece. His native city was ruled by one of those Macedonian magistrates called tyrants, who ruled so many Greek cities after the Macedonian conquest. His father, Clinias, was put to death in one of the political contests of Sicyon, and young Aratus, then only 7 years of age, was for the sake of safety secretly conveyed to Argos. He

was educated by the friends of his family at Argos as a gentleman; as he was vigorous and robust, he excelled in gymnastics, and took off the prize in the 5 several branches. As was natural, he aspired to regain his hereditary position, and associated with himself the Sicyonian exiles in a plot to rid their native city of the tyrant Nicocles. This operation was carried out with the greatest good fortune, their most perilous hazard, according to Plutarch, arising from the gardeners' cur-dogs, "which were little, indeed, but at the same time extremely fierce and furious." Nicocles escaped, and the revolution was effected (251 B. C.) without a single person being killed or wounded. Aratus recalled 580 of the exiles, all in a very destitute condition, and eager to recover their property and standing. The exiles appointed him sole arbiter of their claims, but he declined this delicate trust, and joined 15 of the citizens in the commission. He reestablished harmony between the aristocrats and the democrats, and the returned exiles were so well satisfied with the awards, that they erected his statue in brass, and placed beneath it glowing tributes to his virtues. Antigonus Gonatas, king of Macedonia, watched the growth of the Achæan league with a jealous eye. Aratus strengthened himself by an alliance with Ptolemy Evergetes, king of Egypt, who advanced money to satisfy the claims of the Sicyonian exiles. In pursuance of the same anti-Macedonian policy, he caused the enrollment of Sicyon in the Achæan league, and the Achæans made him their general. While holding this office, he meditated the project of surprising the Acro-Corinthus, the strongest citadel of the Peloponnesus, and expelling therefrom the Macedonian garrison. He took the citadel with 400 men, came down into the theatre, where he was welcomed with acclamations, and made a speech to the people, imploring the citizens to join Corinth to the Achæan league, and to admit an Achæan garrison. The Corinthians acquiesced, and he delivered up to them the keys of their city, which they had not possessed since the days of Philip of Macedonia. Aratus contributed 20 talents out of his private fortune toward the bribe of 150, which was given by the cities of the league to the Macedonian governor of Athens, to give up the citadel to the Athenians and the Achæans. The Macedonian monarch was not his only opponent. The fierce and barbarous Ætolians used to make descents upon the lowlands of Achæa. His next great enemy was Cleomenes, of Sparta, who sought to reestablish the ancient Spartan hegemony over the rest of the Peloponnesus. Aratus and the league were uniformly defeated by the young and ardent Cleomenes, and the reputation of Aratus suffered a disastrous eclipse. The successes of Cleomenes emboldened him to demand the generalship of the Achæans, and in this crisis Aratus advised them to call in the help of the Macedonian king, Antigonus Doson, at the price of delivering up to him the citadel of Acro-Corinthus. This act

has been much condemned. Plutarch argues that Aratus should rather have ceded to Cleomenes' demands, because Cleomenes was one of the Heracidae and a true-blooded Hellenic, while the Macedonian was not. The Aitolian barbarians afterward defeated Aratus, and great complaints were made at the Achaean congress about his imbecility. Antigonos Doson, on his death-bed, conjured Philip, his successor, above all things to be guided by the long experience of Aratus. Indeed, Philip's affairs prospered in his hands. The Macedonian courtiers, however, did not like the Greek counselor, but reviled and abused him at table, and once threw stones at him as he was retiring to his tent. Philip gradually became alienated from Aratus, and at length removed him with a slow poison. Aratus was conscious of the cruel deed, and bore it patiently, simply saying, "Such, Oephalon, are the fruits of royal friendship." He died at Argium, after he had been 17 times general of the Achaeans, but at the desire of the Sicyonians he was buried in their city. There they were wont to offer 2 yearly sacrifices, one on the anniversary of the deliverance of the city from Nicocles, the other on his birthday. Plutarch says that in his day some traces of the ceremonies still remained, though they had been mostly worn away by time and other circumstances.

ARAUCAINIANS, the name given to a South American confederation of kindred tribes who have maintained their independence of Spain and the republics of Spanish origin which environ them. They inhabit the country comprised between lat. 86° 44' and 89° 50' S. and long. 70° and 74° 30' W., and bounded E. by the great Cordillera of the Andes, W. by the Pacific ocean, N. by the river Biobio, and S. by the Callacalla. Their territory thus extends 186 miles along the coast, its breadth, from the sea to the crest of the Andes, being, perhaps, about 150 miles. The name Araucanian is derived from the Indian word *auca*, meaning frank, or free. The productions of the country are similar to those of the republic of Chili, with which the Araucanians live in close alliance. As decidedly the most successful and largest example of Indian self-government in the presence of the European races, the Araucanians, their history, and their manners, are matters of considerable interest to the philosopher and the ethnologist. The chief authority with regard to them is "Molina's History of Chili," composed in Italian and translated into Spanish by Mendoza. Six different poems have been written by Europeans upon their patriotic struggles against the European invaders. The best is the *Araucana* of Alonso de Ercilla, a Spanish knight of the 16th century, who took part in the wars he describes. The Araucanians were first invaded by the Spaniards in 1587. Valdivia founded many settlements in their country, which were destroyed in 1602. A pious Jesuit missionary impressed upon the Spanish government the advantage of living at peace with these tribes, but a quarrel about a Spanish

lady and some Araucanian converts to Christianity broke up the negotiations. In 1641, the marquis de Baydes made a treaty with their chief, but in 1665 war commenced again, and lasted at intervals until 1773, when Spain at length acknowledged the independence of the Araucanians, and allowed them to maintain an embassy at Santiago de Chili. Since this period, the Araucanians have made good progress in the arts of peace. In the contest between the mother country and the Chilian colonists, they preserved a strict neutrality. Schmidt-meyer visited them in 1820, and published his "Travels into Chili, over the Andes," in 1820-'21; the latest work on the subject is the very instructive book of Mr. Edward Reuel Smith, of the U. S. astronomical expedition in Chili, "The Araucanians; or, Notes of a Tour among the Indian Tribes of Southern Chili," New York, 1855. Their polygamy and marriage ceremonies, their mode of dress, their funeral rites, their calendar, their cultivation of oratory, poetry, and medicine, their civil and criminal common law, their languages, and their habits, are so similar to those of other Indian tribes, and, in many respects, to those of savage life the world over, that we pass them by without special notice. Their political condition, on the other hand, is peculiar, as are also, to some extent, their religious ideas, which are largely colored by their political institutions. The territory of Arauco has been from time immemorial divided into 4 *butthanmapus* or *uthalmapus*, or provinces, each presided over by a magistrate called a *toqui*; these 4 provinces correspond to the natural divisions of the country, viz., the maritime province, the plain province, the province at the foot of the Andes, and the province in the Andes. Each of these is divided into 5 *illarehus*, which we will call counties. In each county is an *apo-ulmena*, who, under the *toqui*, presides over the county; each county is further subdivided into 9 *rehues* or townships, over each of which presides an *ulmena*, or head of a clan. The symbol of a *toqui* is an axe of porphyry or marble; of an *apo-ulmena*, a staff with a silver head and a silver ring round the middle; of an *ulmena*, the same without the silver ring round the middle. All of these dignities are hereditary according to primogeniture. No regular tribute or any predial service is payable by the clan to the *ulmena*, by the *ulmenes* to the *apo-ulmena*, or by the *apo-ulmenes* to the *toqui*. Every magistrate must support himself out of his demesne lands. In time of war, however, military service is acknowledged as the most sacred of duties. Then, the general subordination from the grand *toqui* to the simple clansman, is brought to light. This brings us to the central government. The 4 *toquis*, or governors of provinces, form the grand council of the Araucanian federation. This grand council is presided over by one of its own members, the grand *toqui*. This council decides on war and peace, conducts the foreign relations, and, on emergencies, calls

together the general assembly or diet of the nation. At this diet, every *toqui*, *apo-ulmene*, and *ulmene*, may attend; it chooses the commander-in-chief from among the 4 *toquis*; but if none of them are qualified, then from the diet at large. The commander-in-chief being nominated and having assumed the badge of command, the other *toquis* lay down their badges of authority and swear allegiance to the dictator. The levy is made by the *ulmenes* upon their several clans. The army consists of both cavalry and infantry. The *toqui* Cadeguala was the first who established a regular body of cavalry, in 1585. The diet is held in a large plain which lies between the rivers Biobio and Dunqueco. The present grand *toqui*, or president of the Araucanians, is thus described by Mr. Reuel Smith: "Mafin-Hueno (the grass of heaven) is very old, his age being variously estimated at from 90 to 100, and even more; but in his appearance there is little to indicate so advanced an age: erect, though not vigorous, with a bright, piercing eye, and his long black hair but sparsely scattered with gray, he might be taken for a person of 60. His nose is slightly aquiline, his cheek deeply furrowed, his chin massive, and his whole air is that of one of strong will, and accustomed to command. His voice is deep but not harsh, and he speaks deliberately, as though weighing well the import of his words; he also listens attentively, as becomes one chosen for his superior wisdom to preside over the welfare of the nation. The dress of the grand *toqui* was not, it must be confessed, such as might have been expected, considering his exalted rank. He wore a shirt that probably had been used for several months without washing, a ragged military vest, and a poncho tied round the waist, and falling to the feet like a petticoat; a red-and-yellow handkerchief surmounted his head, and completed his costume. I noticed, however, hanging overhead, a bridle bit, headstall, and reins, covered with massive silver ornaments, and though the powerful Mafin is generally considered a poor chief, 200 hard dollars would scarcely have furnished the silver lavished upon his various horse trappings." Mr. Smith informs us that Mafin had 20 children, in 1854, with prospect of additions. When Mr. Reuel Smith travelled through Arauco, he did so as the adopted son of Mafin, which gave him a good position with the petty chiefs. The religion of the Araucanians is akin to their political institutions. Their Supreme Being is the great *toqui* of the universe; he has his subordinate *ulmenes* to look after details. These *dei minores* are, the god of war, the beneficent god, the god of mankind, and others. Guecubu is the god of evil. The celestials exact no tribute from their subjects here below; therefore the Araucanian builds no temples nor idols, supports no priests, and rarely offers sacrifice. After the death of the body, the soul goes into Paradise, a region which lies on the other side of the Andes. Their religion, in other respects, resembles other primitive creeds. They hate the

Spanish language, and their *toquis*, though well acquainted with it, will never use it on any public occasion. They make a foreigner take an Araucanian name before he is allowed to settle among them; a missionary, when preaching to them, is often interrupted in the midst of his discourse, if he commits a blunder. As this language still remains merely a spoken tongue, its preservation in purity depends upon a strictly accurate use of it in practice. The Araucanians are stoutly built, and of moderate height. Their complexion is olive, and lighter than the other South American Indians, they have a round face, low forehead, short, broad nose, small, fiery eyes, small lips, and long head. Like other Indians, the women do all the home and field work; the men hunt, fight, and tend the flocks. The population has been usually stated to be 70,000, but recent estimates give a much higher number.

ARAUJO, JOZÉ BOREAS DE, a Portuguese philosopher, born at Lisbon in 1667, died 1743, held an official position at Ceuta, acquired some fame by his devotion to philosophy and the fine arts, and published in 1740 two volumes of philosophical writings. His great wealth allowed him to gratify his philanthropic disposition, and he was as much beloved for his deeds of charity, as respected for the solidity of his attainments.

ARAUJO DE AZEVEDO, ANTONIO DE, count da Barca, a Portuguese statesman, born at Sa, near Fonte-de-Lima, in 1754, died at Rio de Janeiro in 1817. In 1779 he became Portuguese ambassador at the Hague, and in 1797 he signed on behalf of his government a treaty of peace with France. He afterward represented Portugal at the courts of Berlin and St. Petersburg, and in 1804 he returned to Lisbon. Soon after his return he was put at the head of the administration, and in 1808, after the downfall of the house of Braganza, he accompanied John VI. to Rio de Janeiro, where he resided until 1812, when he was again invited to become a member of the cabinet of Lisbon. He was appointed minister of marine, and was for some time at the head of foreign affairs; after the death of the Marquis d'Aguiar in 1817, he was called upon to succeed him as premier, but his health could not stand the harassing wear and tear of business, and he died in the same year. Araujo was a man of considerable literary attainments and of generous sympathies. In 1779 he was one of the founders of the scientific academy of Lisbon, and in 1816, shortly before his death, he issued a decree for the establishment of a school for the fine arts in Rio de Janeiro. He translated Gray's *Elegy* into Portuguese, and he wrote an "Apology for Camoens," addressed to La Harpe, which was published in 1805 by the scientific academy of Lisbon. He was also the author of 2 tragedies and some poetry, and left valuable mineral and botanical collections. Under his administration the first attempt was made to introduce the culture of tea into Brazil.

ARAURE, a city of Venezuela, pleasantly situated on the Acaugua, a branch of the Portuguesa, in the province of Apure, about 60 miles N. N. E. of Truxillo, N. lat. $9^{\circ} 17'$ W. long. $69^{\circ} 28'$. It was originally founded by the Capuchins. It is laid out with great regularity, and its houses are well built. It has a fine plaza, and a good church. The district, of which it is the capital, produces considerable quantities of cotton and coffee, and raises large herds of cattle. Population, 10,000.

ARAVULLI, or **ARAVALI**, a mountain range of northern India, territory of Ajmeer, which extends from lat. 24° N., from S. S. W. to N. N. E. for about 800 miles. Its breadth varies from 60 miles to 6 miles. The average height of the range is about 3,000 feet; the highest summits do not exceed an elevation of 5,000 feet.

ARBACES, the founder of the Median empire, according to Otesias. This author asserts that Arbaces captured Nineveh, and overthrew the empire of Sardanapalus in the year B. C. 876, that he reigned 28 years over the Medes, and that his dynasty numbered eight kings.

ARBALAST (Fr. *arbalète*, *arbalétrier*, a crossbow). This weapon does not appear to have been known to the ancients in a portable form, although it was used on a great scale to supply the place of ordnance. Contrary to received opinion, the crossbow was originally a Saxon, as the longbow was a Roman weapon; and both were used at Hastings, adversely, by the two nations. The principle of the crossbow is that of a perpendicular barrel, or groove, in which the missile is placed, with a transverse bow, the cord of which sweeps the barrel and discharges the bullet or bolt. The ancient bow was made of steel, the cord of strong catgut, and such was the force required to bend it, that it could only be done by placing the bow under the two feet, one on each side the barrel, and drawing the string into the catch, which held it at its tension, by the full exertion of both hands with the aid of a steel winch, as is shown in the ancient illuminations of Froissart. The arrow discharged from the crossbow was called a quarrel, from its four-angled iron head; as that of the longbow was the shaft. A smaller missile, used for shooting on the wing before the invention of gunnery, was known as the bird bolt. Hence the old tavern sign of the *bolt in the*, the arrow in the mark. The best crossbow men of the middle ages were the Genoese and Picards; it never was an English weapon, nor could ever compete with the longbow. A very large crossbow, called a *trebuchet*, was used in the defence of walled places by the Normans, casting huge beams shod with iron.

ARBELA, now **ARBIL** or **ERBIL**, a small village in Koordistan, which lies on the usual route between Bagdad and Mosul in $36^{\circ} 11'$ N. lat. according to Niebuhr's observations. The houses are built of sun-dried bricks. Arbela was the name of the third and last of the great battles fought between Alexander and Darius 331 B. C. The battle was not actually fought

at Arbela, but at a little place 26 miles west by north, called Gaugamela, now Karameles. After the battle Alexander crossed the Lycus and rested at Arbela.

ARBITER, a Roman umpire. The agreement by which parties bound themselves to refer matters in difference to an arbiter, was called *compromissum*. Cicero says that the difference between a regular suit (*judicium*) and an arbitration (*arbitrium*), was that the former dealt with cases where a liquidated or definite amount was demanded (*pecunia certa*), and the decision was either aye or no; whereas the arbitration dealt with cases of uncertain or unliquidated amounts.

ARBITRATION, is the submission of civil questions to the judgment of a private individual, instead of to the regular judicial authorities. Crimes can never be the subject of a legal arbitration, because society is interested in the prosecution of criminals to the end, and in the most thorough investigation of offences against law and order. Arbitrators are frequently preferred to the regular courts in every civilized country, because the process is generally freer, the forms are, or should be, less expensive and simpler, and the delay less. The preliminary agreement under which the arbitrator acts, which defines his powers and position, and the subject matter in dispute, is called the submission, and the judgment of the arbitrator is called the award. In many countries the award of an arbitrator is clothed with judicial authority, and, by the observance of certain formalities, can be enforced as a judgment of a regular court of law. In countries where such powers are not granted to an award, the only remedy that lies against the recalcitrant party is an action for breach of contract in that he refuses to obey what by the original submission he had agreed to abide by. Arbitrators are often empowered to order certain things to be done, and, in default, to do the things themselves, and charge the expense to one or both of the parties. In mercantile and industrial contracts a clause is often inserted that differences arising under them shall be referred to an arbitrator, or to two arbitrators, who, in case of disagreement, shall choose an umpire, who shall make the final award. As civilization advances, this system of settling disputes comes more and more into favor. In Athens arbitrators were called *diastynai*. The Justinian code devotes much space to this subject, and has been the basis of all the law concerning arbitration ever since. By an act of the legislature of Pennsylvania, June 13, 1836, arbitrations are made compulsory in that state. Either party to a civil action may insist on referring the suit to arbitrators. If the parties cannot agree, the prothonotary draws up a list of citizens, and the parties alternately strike each one of the list, until only the number agreed upon by the prothonotary is left; these are to be the arbitrators; their award is subject, however, to appeal.

ARBLAY, MADAME D' (Frances Burney), English novelist, the daughter of Charles Burney, a musician, and author of a history of music, born at Lynn, in June, 1752, died Jan. 6, 1840. In her childhood no indications of her remarkable talents appeared. She was silent and timid. At 8 years old she did not know her letters, and was considered by her friends as uncommonly dull and unpromising. In 1760 her father removed to London, took the house in Leicester square that Newton had lived in, obtained the degree of Mus. Doc. from the university of Oxford, and was soon much sought as a teacher of music. Before Frances had acquired the rudiments of an education, her mother died, and she was left to educate herself; for her father had no time to superintend her studies, and seems not even to have supplied her with a teacher or governess. She was not a great reader, especially of novels; but she was gifted with a quick observation, and a facility in writing; and, one very great advantage for the exercise of both these gifts she had in the society which her father's position drew about her. His house was the resort of the most elegant and distinguished people. Johnson was his friend, and Garrick his frequent guest. In his rooms the most eminent musicians gave concerts which lords and ladies attended. Here was rich material for genius to work upon, and Miss B. soon gave indications, by her letters and the little stories she wrote for her own and her sister's diversion, that she rightly appreciated her privileges. Her father was quite ignorant of her talents and tendencies. Her mother-in-law had from the first discouraged her writing of tales; but her genius could not be restrained, and, in 1778, "Evelina" was published, under an assumed name, by a Mr. Lowndes, who gave her £20 for the copyright. Though the author of the book was unknown, and the publisher was not eminent, its success was marvellous, and Miss Burney was at once classed among the first writers of fiction. "Evelina" was followed by a comedy, "The Witlings," which was never acted, nor even printed, and in 1782 appeared "Cecilia," which was a triumph. Three years after this she met the king and queen accidentally at the residence of a Mrs. Delany, in Windsor, an introduction that led to the offer of the vacant post of keeper of the queen's robes. This office crowded the next 5 years of Miss B.'s life with the most inane drudgery, and deprived her of all leisure and liberty for the exercise of her literary gifts. She resigned this post in the palace on account of her failing health, and not long after (1798) married Alexander Richard d'Arblay, a French artillery officer, a gentleman, but poor, whom the revolution had made an exile. In 1798 "Cannilla" was published in 5 volumes, bringing the authoress a handsome sum of money, but no increase of fame. Ten years, from 1802 till 1812, she passed in Paris, her husband having given in his allegiance to Napoleon's government. At

the expiration of this term she returned alone to England and produced another novel in 5 volumes, "The Wanderer," a book that had little popularity, and is now almost forgotten. At the peace, her husband, now General d'Arblay, joined her, and remained with her till his death, at Bath, in 1818. Fourteen years after this event (1832) Mad. d'Arblay published in 8 volumes the memoirs of her father, the closing work of her long life, which ended when she was 87 years old. The literary fame of Mad. d'Arblay is allowed to rest upon "Evelina" and "Cecilia," her earliest works. Her diary, edited by her niece, though diffuse and garrulous, is very curious and entertaining. The memoirs of her father, written when she had lost the freshness and grace of her faithful style, are turgid and wearisome. As a novelist she is celebrated, and her works mark an era in the history of English fiction.

ARBOGA, an ancient town of Sweden, 65 miles west of Stockholm, on the Ulvicon. It is famous for its beer, and has a considerable trade in leather, iron, copper, &c., which is carried on with Stockholm by the Arboga river and Mælar lake. Near Arboga is a once sacred grove and remains of Pagan worship.

ARBOGAST, or ARBOGASTES, a Gaul in the military service of the Romans during the latter half of the 4th century. In 388 he accompanied the emperor Theodosius on his expedition from Constantinople to Italy to support Valentinian II. against the usurper Maximus. After the revolt was reduced, Arbogast, by the order of Theodosius, remained with Valentinian as adviser. He exercised an absolute power over Valentinian, and when the latter attempted to recover his independence, Arbogast put to death all his partisans, and finally the emperor himself. Not daring to seize upon the imperial purple, he gave it to Eugenius, a distant relation of Valentinian, and a Roman patrician, going himself to Gaul to fight against Marcomir, chief of the Franks. Theodosius marched into Italy to avenge his cousin, and Arbogast and Eugenius met the imperial army in the passes of the Julian Alps, now a part of the Tyrol, where they fought a battle, in 394. Arbogast being defeated, escaped into the mountains and committed suicide.

ARBORICULTURE is a comparatively new term in the language of agriculture. It is derived from the Latin *arbor*, and *cultura*, and is employed to designate the modes of cultivating and perfecting trees, shrubs, and vines, for fruit-bearing, ornament, hedges, shelter, and artificial forests. Man has gradually improved the varieties of trees, learned their habits of growth, and their adaptation to given localities. Observed facts and principles—the results of investigation and experiment—have reduced tree-culture to a science, though not yet complete in its detail. The functions of various portions of a tree being understood, and its food-wants known, success in its culture may be secured. The science of vegetable anatomy

and physiology teach the following facts: 1. No tree can be perfected unless it have a good mechanical development of root, stem, branches, and leaves, early in life. 2. To produce these, the seed containing the tree in embryo must be derived from a healthy parent; the soil in which the seed is planted must contain the elements essential to the young tree, in a state fit for appropriation. 3. Soils varying in their physical or mechanical conditions, as to fineness of texture, porosity, aridity, and humidity, are adapted to various kinds of trees. 4. Man may vary these conditions so as to improve or injure trees for productiveness. 5. Certain portions or organs of a tree may be developed by pinching off shoots and buds, cutting back leaders and side branches.—Soils in their natural state produce trees adapted to their peculiarity of constitution. Thus, we have the wild crab, plum, peach, orange, and other kinds of trees, inhabiting localities where the soil and climate are exactly adapted to their wants. The cultivated varieties of fruit so acceptable to man, all sprang from wild ones. Some kinds of fruits growing wild are not benefited by culture, while the simple removal of others from uncultivated to tilled lands will cause a radical improvement. Seeds of wild trees, sown in rich soils, in good condition mechanically, will produce trees of an improved character, bearing fruit which yields a larger quantity of pulp than the wild tree, and generally of a better quality. The seeds of these, when sown under the most favorable conditions, will yield still finer fruit, until a certain point of excellence is attained, when the central energy of the tree being expended, it gradually returns to its original wild condition. When a good variety of fruit is obtained by culture, or by accidental discovery, it is multiplied indefinitely by the processes of grafting, layering, and budding. In this way have all our choice fruits been obtained, and finally perfected. The laws which have been unfolded by the sciences of vegetable physiology and anatomy, together with the established truths of improved culture, point to vast changes yet to be wrought in fruit production for man's benefit. By thorough attention to the selection of the best varieties of trees, and their culture, the product of an acre may be readily doubled, and even quadrupled.—In the practice of arboriculture, it should be remembered that the conditions which produced a given variety of fruit in its present perfection must be again established, to reproduce or continue it. Especial directions for tree-culture are given under the name of each kind of tree. The general principles, only, of arboriculture are as follows: 1. *Situation.* This should be selected with reference to the kind of tree, its uses and habits. All trees liable to suffer from sudden frosts should be placed in cold exposures, so that the buds may remain dormant as late in the spring as is consistent with complete wood growth in early autumn. Fruit trees

should be little exposed to heavy blasts of wind, although a free circulation of air is to be desired.—II. *Soil.* For fruit trees, and for all other trees, except those of the pine and fir tribe, deep, rich loams, containing a fair share of lime, are preferred. Light sands, hungry gravels, and wet marsh lands, are alike unsuited to the development of hard wood, forest, and fruit trees. Calcareous loam soils are preferred for the apple, while the pear and plum delight in heavier clays. The quince and pear will bear moist soils, while the peach may be grown on light soils, though its highest development and greatest duration are only reached on strong loams. The pine and fir tribe grow well on poor, sandy, and gravelly lands, with shallow surface-soil.—III. *Preparation of soil.* For all trees, except those naturally growing on swamps, the soil should be freed from excessive supplies of water. It should be either naturally porous enough to allow falling water to filter rapidly through, and pass beyond the reach of tree roots, or be made so by thorough drainage. Water retained in the soil, preventing the plant from procuring its food, becomes sour, excludes the atmosphere, and otherwise obstructs plant growth. (See DRAINAGE.) It is true, under drains will be clogged with roots so soon as the trees growing above them attain any considerable size; but drainage and general porosity of soil will have become so thoroughly established before this period as seldom to require additional draining in after years. Thorough subsoiling will sometimes open cuts down to a porous subsoil, and thus establish good drainage without the absolute necessity of making regular drains. Open surface ditches will not suffice for lands planted to fruit trees, though they may answer for forests. Before planting out trees the soil should be thoroughly pulverized with the surface and subsoil ploughs. No hard pan should be allowed to exist within the usual range of tree roots.—Merely digging large holes will not fully answer, as the roots in extending meet with a compact mass of earth and become checked, producing more or less serious injury to the tree. The highest degree of perfection in the physical preparation of the soil can only be obtained by deep trenching. This is pursued extensively in Europe, where labor is cheap, and with us for grape vines and small fruit.—IV. *Manuring.* A soil deficient in materials required by growing trees, cannot support them unless the missing elements of their composition be added. As a general rule, to employ lands not well suited for the kind of tree to be planted, will prove too expensive for profit; hence soils are usually selected which require but partial manuring. If the soil be newly broken, or rather cold in its nature, half decomposed barn-yard manures, or composts of muck and manure, may be added in the autumn previous to ploughing the soil. By turning these deeply under, the soil will become improved by their decay. In no instance should long manures be brought in con-

tact with tree roots. The gases eliminated by decomposition will prove too concentrated, and thus destroy the delicate rootlets with which they may come in contact. Heavy dressings of lime and ashes may be profitably applied directly to all heavy lands, and those of a peaty character, no matter what kind of wood is to be grown. Light soils may receive these alkalis after they have been employed to decompose muck, peat, or forest earth—the whole mass being dressed over the surface of the soil and afterward ploughed under. The more thoroughly decomposed manures become before being added to the soil—provided their soluble elements are determined and properly divided—the better are they adapted to serve as food for trees. A fair proportion of decomposing vegetable matter should exist in every soil prepared for fruit trees; still this is by no means so essential as the insuring of a full supply of mineral elements; since trees, by means of their foliage, abstract the organic elements from the air.—*V. Transplanting.* Trees having attained sufficient size in the nursery, they are carefully lifted, all bruised roots and a portion of the root tap cut away with a sharp knife, the top and side branches cut back to balance injuries received by the roots. A moist day is the best for lifting and planting, but if a thick puddle be made with water and clay, or heavy loam, the tree roots dipped in it immediately after their removal from nursery rows, the planting may be done at any time with safety. The holes should be dug at least 3 feet wide and 2½ deep, loosening the bottom earth, and filling the hole with surface soil, decomposed turf, or good composts of earth and manure. Bones, old leather, or plastering, may be added with profit. This will furnish a magazine of food for a long time. Set the trees at about the same depth they stood at in the nursery, being careful to give every root plenty of room. Sprinkle fine earth over them, but do not shake the tree up and down, as this draws them out of place and finally leaves the roots crooked. For spring planting pour a pail or two of water in the half-filled hole to settle the earth among the roots, fill up the hole, and employ the poor subsoil taken from the bottom of the holes to replace the surface earth removed from about them; drive a strong limber stake into the ground near the tree, to which it may be attached by straw bands, cover the soil for a distance of 8 feet about the tree with hay, straw, leaves, litter, or spent tanbark, to prevent the rapid escape of water till the tree gets well established.—*VI. After-culture* consists in thoroughly cultivating the spaces between the trees, and growing some low, hoed crop to keep the soil in a free condition, being sure to add more manures than the crop can consume. Remove all dead wood and unnecessary branches, and keep the bark clean to prevent insects from lodging in it. The general principles given above will apply to forest and ornamental trees, except that they do not require manuring nor

so thorough culture, since they are less removed from a wild state.

ARBORIO, MEBOURINO, known in history as the count di Gattinaria, born at Vercelli, in Piedmont, in 1465, died at Innsbruck in 1530. He was intended for the bar, and pursued a course of legal studies, which he resigned to embark in the more profitable career of a statesman. His first appearance in this character was as a member of the council of the duke of Savoy, in which capacity his excellent administrative talents attracted the attention of Margaret of Austria, who, in 1507, appointed him to preside over the parliament of her hereditary province of Burgundy. This may be considered as the commencement of his political advancement, as he was ever afterward intimately and conspicuously connected with the imperial court. In 1520, Charles V., upon his coronation at Aix la Chapelle, appointed him chancellor and member of his privy council. Thenceforth he enjoyed the entire confidence of the emperor, who consulted him in every emergency, and employed him to conduct many of the most delicate and difficult affairs of state. In 1529, he was the principal agent of Charles in concluding the treaty of Cambray, but he resolutely refused to affix his signature to that of Madrid, by which Francis I. was liberated, because he regarded it as dishonorable to the imperial cause. His ability and integrity were appreciated by Charles, over whom he exercised an exceedingly beneficial influence. He was always an advocate of lenient and conciliatory measures toward the Protestants, and was in the habit of citing the evil consequences of the rigorous measures embraced in the edict of Worms, in support of his policy. His moderation even inspired Luther and the other German reformers with the idea that he secretly sympathized with them, although he never publicly declared himself in favor of the reformation. So discreet and well-considered was his course, that in an age requiring a careful exercise of the highest qualities of a statesman, he enjoyed the esteem of all parties, without incurring suspicion or jealousy, or losing for a moment the confidence of the emperor or the pope. The latter offered him a cardinal's hat, which, notwithstanding his unecclesiastical training, he accepted, although he did not live long to wear it, having been carried off by an attack of the gout at Innsbruck, while accompanying the emperor to Augsburg. He enjoyed a great reputation for learning and eloquence, and apart from his celebrity as a statesman, was considered one of the most accomplished men of his time. Such was the opinion of his contemporaries, upon which we must rely almost entirely, as he has left little by which to judge of his abilities.

ARBRISSEL, ROBERT D', founder of the order of Fontevault, born at Arbrissel, France, in 1047, died at Orsan in 1117. At the age of 27 he went to Paris to study theology, preparatory to entering the church, for which he had

been originally destined. In 1085, upon his appointment as vicar-general of the bishop of Rennes, he began to introduce some very sweeping reforms among the clergy and people of the diocese, which brought him into such bad odor, that upon the death of his superior in 1089, he was fain to retire to Angers, and give instructions in theology. At the expiration of 2 years, disgusted with the world, he retired into the forest of Craon, on the frontiers of Anjou and Brittany, where he lived as a hermit, devoting himself to severe penances for his spiritual benefit. His example was contagious, and the neighboring forests of Anjou, Normandy, and Brittany, were soon filled with anchorites, who subsequently became members of the celebrated order of Fontevrault. Finding himself surrounded by so large a number of disciples, Arbrissel founded, in 1096, the abbey of La Roe, of which he became the first prior, but soon relinquished this peaceful life to travel barefooted through the country, preaching repentance and penance to the people. He soon had several thousand followers of both sexes, for whose accommodation he built a number of abbeys, the most celebrated of which is that of Fontevrault, near Poitiers, established about the year 1100. The remainder of his life was spent in similar occupations. He is said to have undergone the most extraordinary trials, to enable himself to resist any possible temptation.

ARBUCKLE, JAMES, a Scottish poet who lived in the first half of the 18th century. He published at Edinburgh a poem called "Snuff;" in London, a "Letter to the Earl of Addington on the Death of Joseph Addison;" "Glotta," a poem dedicated to the marchioness of Carnarvon, by a student of the university of Glasgow; "Hibernic Letters," London, 1729, and some fugitive verses in the "Edinburgh Miscellany."

ARBUCKLE, MATTHEW, brevet brigadier-general in the United States army, was born in Greenbrier co., Va., about 1775, and died June 11, 1851. He at different times commanded at New Orleans, Fort Gibson, and Fort Smith, and was in several engagements during the war with Mexico. Much of his life was passed among the Indians, who placed implicit confidence in him. At the time of his death he commanded the 7th army department.

ARBUTHNOT, ALEXANDER, a Scottish theologian, lawyer, historian, and poet, born in 1538, died 1583. He was the author of a "History of Scotland," of too republican a tendency to be pleasing to Scottish royalty. While the reformation was embroiling every public and private relation in Scotland, Arbuthnot wrote poetry. "The Praises of Women," and "The Miseries of a Poor Scholar," were the fruits of his contemplations in a most stormy period. In his youth, Alexander Arbuthnot studied jurisprudence in France; and in 1572 he published in Edinburgh his *Orationes de origine et dignitate Juris*.

ARBUTHNOT, JOHN, M. D., the son of a

Scotch Presbyterian clergyman, and one of the constellation of wits in the reign of Queen Anne, born in Kincardineshire, Scotland, about 1675, died in London, Feb. 27, 1735. He was educated at the university of Aberdeen, where he studied physic and took his doctor's degree. His father, by refusing to comply with the Presbyterian system introduced at the revolution, was deprived of his preferment, and young Arbuthnot therefore went to seek his fortune abroad. He repaired to London, where he supported himself for a while by teaching mathematics. He made his first literary venture in 1695 in a critical essay entitled an "Examination of Dr. Woodward's Account of the Deluge," in which he aimed to show that a universal deluge was inconsistent with philosophical truth. This work excited much curiosity, and the reputation which it gave the author was considerably heightened in 1700 by his "Essay on the Usefulness of Mathematical Learning." He now began to practise as a physician, and quickly attained a high position in the profession, his witty conversation and agreeable manners often, it was said, being quite as serviceable as his prescriptions. In 1704 he contributed to the royal society a paper concerning the regularity of the birth of both sexes, in which he demonstrated the fact from authentic statistics, and deduced from it arguments against polygamy, and for the existence of divine providence. This paper procured his election into that body. In 1709 he was appointed the queen's physician in ordinary, and the next year was admitted a member of the royal college of physicians. During the ascendancy of the tory party he held a lucrative and honorable position, and lived in constant intercourse with the chief literary men of the time, with Pope, Swift, Gay, Parnell, Gray, and Prior, in which brilliant circle he was unequalled for learning and unsurpassed for wit. In 1712 he wrote the "History of John Bull," a political allegory, full of happy satirical allusions, and designed to ridicule the duke of Marlborough, and to render the war unpopular. It is the most durable monument of his fame, and one of the best humorous compositions in the English language. Some of its allusions which are difficult to understand at present have been admirably illustrated by Sir Walter Scott in his edition of Swift's Works. He formed in 1714, in conjunction with Swift and Pope, the plan of writing a satire on the abuse of human learning in every branch. The design was to be executed by the combined labors of this illustrious triumvirate, in the humorous manner of Cervantes, under the history of feigned adventures. "Polite letters," says Warburton, "never lost more than in the defeat of this scheme." It was frustrated by the death of Queen Anne, by which Arbuthnot, who had been her favorite physician, lost his place, and a serious blow was given to all the political friends of the associated wits. In the dejection which followed, and by reason of the

growing infirmities of Swift, the design was never carried further than an imperfect essay, written chiefly by Arbuthnot, under the title of the "First Book of the Memoirs of Martinus Scriblerus." This fragment of satire, though sometimes directed against phantoms of absurdity, and fabulous rather than familiar follies, is yet an original and most witty performance. Dr. Arbuthnot visited Paris immediately after the death of the queen, and on his return changed his apartments from St. James's to Dover street, and continued his literary occupations and his practice of physic. In 1717 he and Pope gave assistance to Gay in a farce entitled "Three Hours after Marriage," and it is remarkable that the production of their joint wits was condemned the first night. The failure is explained in part by the peculiar character of Arbuthnot's humor, which was something too refined and rare, and too much associated with matters of learning, to be generally appreciated. In 1728 he was chosen second censor of the royal college of physicians, and in 1727 was made an elect of the college, and pronounced the Harveian oration. In the same year also appeared his learned work, and the most valuable of his serious performances, entitled "Tables of Ancient Coins, Weights, and Measures." He continued to divert his leisure hours by writing humorous papers, one of the most remarkable and dignified of which was an epitaph upon the infamous Col. Charteris. In 1722 he contributed to detecting and punishing the impositions and abuses carried on under the specious name of the "Charitable Corporation," and shortly afterward published his essays concerning the "Nature and Choice of Aliments," and the "Effects of Air on Human Bodies." The state of his own health doubtless led to his selection of these topics. He was living in great debility at Hampstead, and failing to obtain relief, returned but a short time before his death to London. His last humorous work was an entertaining and scholarlike paper on the "Altercation, or Scolding of the Ancients." The amiability of the character of Arbuthnot is seen in the fact that he retained uninterruptedly the precarious friendship of such men as Pope and Swift. Swift said of him, that "he had more wit than we all have, and more humanity than wit." His letters reveal at once his manliness and his tenderness, and he was in his time equally admired for his virtues and his accomplishments. His writings, of which he seldom spoke, and in which, after their publication, he seemed to take no interest, are so blended with those of his confederates that they are not easily distinguished. Though the lapse of time has made the humor of them less palpable than formerly, they are still read, and will always furnish delight to the more meditative and serious class of the lovers of wit.

ARBUTUS, a genus of evergreen shrubs belonging to the natural order *Ericaceæ*. Its fruit is a berry containing many seeds. The most

remarkable species of this genus, is the arbutus of Virgil, called the *A. undedo*, or the "strawberry tree;" the berries of which bear a strong resemblance to the common strawberry. It is a native of the south of Europe and the Levant. In northern Europe it is a hardy evergreen, sometimes attaining to a height of 20 feet, bearing greenish-yellow blossoms in October and November, and bright yellow and red berries in November and the following months. At the lake of Killarney in Ireland, there are beautiful groves of this species of arbutus, which give a charming aspect to the country. Its berries are hardly eatable, and, if eaten freely, are apt to produce stupefaction. In Corsica, a pleasant wine is said to be prepared from them. Its bark and leaves are astringent. The oriental arbutus, or *A. andrachne*, is a native of the Levant, and has similar narcotic qualities. It is superior in beauty, but much less hardy in cold climates, not bearing fruit in northern Europe. Its leaves are broader and less serrated; its bark peels off so as to leave the stem always smooth, and of a clear bright cinnamon-brown color. The mule arbutus, or *A. hybrida*, apparently a cross between these two, has great beauty of foliage, and in moderately cold regions, grows well, but does not bear berries in northern Europe. *A. procera* is a native of California, cultivated as an ornamental evergreen in the gardens of Great Britain.

ARO, the name of any portion of a curved line; thus, an arc of a circle is a portion of the circumference. To rectify an arc, is to give the length of the straight line to which it would be equal if it were made to have the same length in a right direction which it now has in a curved. Two arcs are said to be equal, when, being rectified, they have the same length; and similar, when, being taken from different circles, they have the same number of degrees—that is, are equal fractions of their respective circumferences. The arcs of a circle serve to measure the angles; for from the point of the angle as a centre, with whatever radius, let a circumference be described; then the number of degrees of the arc intercepted between the two lines which form the angle will be the measure of the angle. Thus, as the arc of 90° corresponds to a right angle, if we find that the intercepted arc contains 15°, we conclude that the angle corresponds to a right angle, as 15° to 90°, or that it is the 6th part of a right angle. The chord of an arc is the right line which joins its extremities, and a segment is the area included between an arc and its chord.

ARO, JOAN OF (JEANNE D'ARO), known as the "Maid of Orleans," a celebrated heroine of France. She was born Jan. 6, 1410, in the village of Domremy in Lorraine, of poor but decent and pious parents. The true orthography of the name is DARO. She was their 5th child, and, owing to the indigence of her father, received no instruction, but was accustomed to out-of-door duties, such as the tending

of sheep and the riding of horses to and from the watering-place. The neighborhood of Domremy abounded in superstitions, and at the same time sympathized with the Orleans party in the divisions which rent the kingdom of France. Jeanne shared both in the political excitement and the religious enthusiasm; imaginative and devout, she loved to meditate on the legends of the Virgin, and especially, it seems, dwelt upon a current prophecy that a virgin should relieve France of her enemies. At the age of 18 she began to believe herself the subject of supernatural visitations, spoke of voices that she heard and visions that she saw; and, at 18, was possessed by the idea that she was called to deliver her country and crown her king. An outrage upon her native village by some roving Burgundians raised this belief to a purpose; her "voices" importuned her to enter upon her mission by applying to Baudricourt, governor of Vaucouleurs; and this, by the aid of an uncle, she did in May 1428. The governor, after some delay, granted her an audience, but treated her pretensions with such scorn that she returned to her uncle. The fortunes of the dauphin, however, were desperate, and Baudricourt, pressed by her entreaties, sent her to Chinon, where Charles held his court. Introduced into a crowd of courtiers from whom the king was undistinguished, she is said to have singled him out at once. Her claims were submitted to a severe scrutiny. She was handed over to an ecclesiastical commission; she was sent to Poitiers for examination by the several faculties in the famous university there. No evidence indicating that she was a dealer in the black art, and the fact of her virginity removing all suspicions of her being under satanic influence, her wish to lead the army of her king was granted. A suit of armor was made for her, a consecrated sword which she described as buried in the church of St. Catharine at Fierbois, and which she perhaps had seen while visiting among the ecclesiastics there, was brought and placed in her hands. Thus equipped, she put herself at the head of 10,000 troops under the generalship of Dunois, threw herself upon the English who were besieging Orleans, routed them, and in a week forced them to raise the siege. Other exploits followed. The presence of the virgin with her consecrated banner struck a panic into the souls of her enemies. In 3 months Charles was crowned king at Rheims, the maid of Orleans standing in full armor at his side. Her promised work was done. Dunois, however, unwilling to lose her influence, urged her to remain with the army, and she did so; but her victories were over. In an attack on Paris in the early winter (1429) she was repulsed and wounded. In the spring of the next year she threw herself into Compiègne, then beleaguered by the English; made a sortie in which she was taken prisoner (May 23, 1430), and was at once carried to the duc de Luxembourg's fortress at Beaufort. An attempt to escape

by leaping from a dungeon wall was unsuccessful, and she was taken to Rouen. The university of Paris demanded that she should be tried on a charge of sorcery, and solicited letters patent from the king of England, which were reluctantly granted. The chapter at Rouen were rather favorably disposed toward her. Many of the English in authority were unwilling to proceed to extremities. But the university at Paris prevailed; the examination lasted several months, and resulted in a conviction of sorcery. The papers were sent from Rouen to Paris, and the verdict of the university was unanimous that such acts and sentiments as hers were diabolical, and merited the punishment of fire. Sentence of condemnation was read to her publicly on a scaffold by the bishop of Beauvais, and the alternative offered of submission to the church, or, the stake. The terrified girl murmured a recantation, put her mark to a confession, and was taken back to prison. Here she heard her "voices" again; her visions returned. A man's apparel being left in her cell to tempt her, she put it on; the bishop of Beauvais seized upon the act as a virtual relapse into her old unbelief, and hastened the execution of the first sentence. A huge pile of wood was erected in the market-place of Rouen, and, surrounded by a vast assembly of soldiers and ecclesiastics, Joan of Arc was burned on the last day of May, 1431. The Seine carried her ashes to the sea. The infamy of this transaction lies heavily upon all concerned in it: upon the Burgundians who gave her up; upon the English who allowed her execution; upon the French who did the deed, and the French who would not prevent it, and upon the king who did nothing to avenge her—who waited 10 years before he reversed the process by which she was condemned, pronouncing her "a martyr to her religion, her country, and her king." The character of the "Maid of Orleans" was spotless. She was distinguished for her purity, innocence, and modesty. Her hand never shed blood. The gentle dignity of her bearing impressed all who knew her, and restrained the brutality of her soldiers. In 1855 M. Delepièvre, in a little book, suggested doubts in regard to the fate of *La Pucelle*, arguing that another person was burned in her stead. But the papers he used are not believed to be authentic, nor has his argument caused any change in the accepted record of history.

ARCADE, an aperture in a wall with an arched head. This term is also applied to a range of apertures with arched heads forming one of the most beautiful objects attached to the buildings of a city which architecture affords. The arches of arcades are generally supported upon square pillars, and are sometimes employed instead of colonnades to form porticoes, and though they are not so beautiful perhaps, they are stronger, more solid, and less expensive. In a range of arcades, the utmost care should be taken that the piers be suffi-

ciently strong to resist the pressure of the arches, particularly the piers at the extremities, for they alone support the whole. The lateral pressure upon the extreme piers in the range will be equal to that on the piers of a single arcade, and all the intermediate piers will be without such lateral pressure; for the lateral pressures of any two adjoining arches upon the intermediate pier are equal, and being opposite they destroy each other's effect; but the extreme pier having only one adjoining arch, must be sufficiently strong to withstand the horizontal thrust of that arch. The greater the weight or vertical pressure put upon the extreme piers, the more will these piers be able to counteract the thrust of the adjoining arch, consequently if each extreme pier have to support a wall, the higher the wall the less dimensions the pier requires. It is upon this principle that the slender pillars dividing the nave on either side from the aisle in churches of the Saxon and pointed styles of architecture, are capable of withstanding the horizontal thrusts of the groins; for if the insisting wall were taken away, the pillars of most of these buildings would not be able to withstand the thrusts of the arches. Arcades were employed in triumphal arches, theatres, amphitheatres, and aqueducts, by the Romans, and frequently in their temples; toward the decline of the empire the intercolumns were formed into arcades. They may be used with propriety in the gates of cities, palaces, gardens, and parks; they are much employed in the piazzas or squares of Italian cities, and are of great use in affording shade and shelter in hot and rainy climates. There are various methods of decorating the piers of arcades, as with rustics, columns, pilasters, caryatides, Persians, or terms surmounted with appropriate entablatures. Sometimes the piers are so broad as to admit of niches between the columns or pilasters. In some instances the arches of arcades are supported entirely by single or coupled columns, without the entablature, as in the temple of Faunus, at Rome. This form is far from being agreeable to the eye, and it wants stability, as the columns would be incapable of resisting the lateral pressure of the arches were they not tied together by a circular wall.

ARCADIA, an inland, central, and mountainous country of the Peloponnesus, or Morea, and, next to Laconia, the largest of its provinces. It never, however, played a part in the affairs of Greece, in anywise such as might have been expected from the size of its territories, or the admitted bravery of its people. This is ascribable chiefly to the nature of the country, and to the character induced thereby on its people. It had no sea-shores, and no navigable rivers, consequently no commerce, and, it seems, few manufactures. It consists, in fact, of a great elevated mountain bowl, surrounded on the north, east, and south by towering chains of rocky heights, and internally broken into numerous valleys, divided

by mountain ridges, on which the snow was wont to lie, as on the upland plains of Mantinea, and Tegea, when the violets were in bloom and the sunshine warm in the low country of Argos, scarce one day's journey distant. To the west, whither it trended as its watershed, all its tributary streams from its highland gorges falling into the river Alpheus, it was of milder climate and more fruitful soil.—Yet, for all this, Arcadia had its advantages of soil, of scenery, of climate. Alone of Greece, its mountains were not barren, its pastures bare and sun-burned, or its rivers dry, stony water-courses, in the summer time. Magnificent, evergreen mountain sides, innumerable brooks, one more delightful than the other, pastures where the vegetation is never sere, coolness, and shade, and moisture everywhere, abundant verdure, and never-failing springs for the flocks and herds, which constituted her greatest wealth—these were her delights and riches, delights and riches of no small weight, in a parched and arid country, such as Greece is in her general aspect. Her people, who were of the Doric race, and that of the simplest and rudest form, adopted from the first, and maintained to the last, a pastoral life, but a pastoral life widely different from that misrepresented by the Daphnis and Chloë, Doris and Strephon, of the cockney poets, whose best idea of Taygetus was Richmond Hill, of Alpheus the New river. In the Messenian wars, in that intermediate time between the heroic and historic ages, Arcadia seems to have played a more conspicuous part than she did at any subsequent period; she was at that time, like the rest of Greece, monarchical in form of government, and with the rest became republican, and so continued until she was merged in the Roman empire.—Mantinea, Tegea, and Orchomenus were the largest cities of Arcadia, but it cannot be said that they were of much importance, except from their mutual strifes and dissensions, which injured the prosperity of the country more than their wealth, or energy, or enterprise advanced it. In many respects the Arcadians closely resembled the Swiss; in their love of independent mountain life; in their love of freedom; in their love of money; in their willingness to sell their swords to foreign countries. Their country was never conquered. Their heavy-armed infantry was second to none in Greece. Hunters, herdsmen, and musicians, they served the god Pan in their mountains, and cared not for the life of cities. The Arcadians were the Swiss guards of the Asiatic despots; and, where they had taken pay from the barbarian, they served him faithfully to the last, even against their own countrymen, and died for him, as they did at the battle of Issus, where 80,000 mercenaries of the Peloponnesus were slain in the army of Darius, by Alexander. In the Persian, and Peloponnesian wars, the Arcadians, especially the Tegeans, acted principally with the Lacedæmonians. At Platæa, in the great final battle against Mardonius, the Arca-

dians were above 2,000 strong, 1,500 from Tegea, and 600 from Orchomenus, who all did good service. In the celebrated expedition of the younger Cyrus against Artaxerxes, which led to Xenophon's retreat of the 10,000, there were 2,800 heavy Arcadian infantry, and many of the best officers were of that nation. In the social wars which followed, Arcadia was divided against herself, part with the Tegeans, who had fought in the Spartan contingent at Plataea, taking side with the Argives and Achæans, while the Mantineans espoused the party of Lacedæmon. At the battle of Mantinea, where Epaminondas fell, but in falling beat down the pride of Sparta, never to rise again, the Arcadians fought on both sides, and on both suffered severely, though mostly on that of the Spartans, who were utterly defeated. After this, the Arcadians became confederates in the Achæan league, and fell under the Roman power. Thenceforth they have no separate history from that of the empire, and of Greece of the middle ages, and of modern days. —Arcadia, though she produced some good soldiers, has left no name of note, worthy to be recorded. She has left nothing in arts, nothing in letters, to illustrate her records, and certainly seems more obnoxious to the charge of national dulness than Boeotia, which, at least, gave birth to Pindar and Epaminondas.

ARCADIUS, the first of the Byzantine emperors, born in Spain A. D. 383, died at Constantinople, May 1, 408, was the first son of Theodosius the Great, the last ruler of the whole Roman empire. In 395, a few months before his death, Theodosius divided the empire between his two sons, Arcadius and Honorius, giving to the former the eastern part, extending from the Adriatic on the west to the Tigris on the east, and from Scythia on the north to Ethiopia on the south. Arcadius ruled under the regency of Rufinus; but in the first year that individual was assassinated by the emissaries of Stilicon, who pretended to the regency of the empire. Eutropius, a eunuch, had become regent of Arcadius and held the place till 397, when Trigibildas, a Gothic chief, in Phrygia, revolted, and compelled Arcadius to put his favorite to death. Trigibildas and his tribe also obtained permission to pass the Bosphorus and settle on the European side; but their Arianism roused the ire of St. Chrysostom, who stirred up against them the people of Constantinople, by whom they were attacked and massacred, or driven out. Hereupon, the Empress Eudoxia, who had now acquired the absolute control over her husband, caused Chrysostom to be banished to Comana, where he died A. D. 407. Arcadius was a feeble man, but of severe religious orthodoxy.

AROANI DISCIPLINA, the name given to the practice of the early church of withdrawing from public view the sacraments and higher mysteries of the Christian service. The worship of the temple, as described in the Old Testament, was the model to which the early

Christian assemblies, as far as they could, conformed their worship. In accordance with the spirit of the times, and perhaps also as a matter of necessity, the Lord's Supper was administered near the close of the 2d century as a Christian mystery, with the view of investing it with increased sanctity by its secrecy; and by this means a mysterious character was imparted to many of the usages and forms of the church. These secret usages did not receive, till after the reformation, the name of *arcani disciplina*, and they then played an important part in controversy, the Roman Catholics referring to them to prove that certain dogmas and customs were possibly of apostolic origin, though their existence in the early ages of the church could not be historically shown.

ARCANO, MAURO or GIOVANNI, an Italian satirical poet, born in 1490, died in 1586. He came to Rome while a young man, and after serving in several noble families, became attached to the person of the cardinal Cesarini, with whom he remained a number of years, during which he accompanied him on his extensive travels. Arcano was a bold, vigorous, and successful writer. Unsparing in his satire, he ridiculed every folly of the age, but with a coarseness and license which his broad humor cannot always redeem. His style is altogether original, and although not ranked among the great poets, he was held in much esteem by his contemporaries. The *Capitoli* contain the greater part of his satirical poems.

AROANUM, a Latin word, meaning a secret, and applied principally to the operations of alchemists or druggists. Colloquially we speak of the arcana of a profession or trade as equivalent to its mysteries.

AROE, MANUEL JOSÉ, a Guatemalan general, who toward the end of 1824 succeeded Pedro Molina as president of the new republic of Central America. He was the first constitutional president, elected for 4 years with a salary of \$10,000, but not long after the convocation of the first congress, March 5, 1825, it became evident that the national rejoicings which greeted his advent were soon to give place to feelings of discontent. The first discordant element was introduced by the intrigues of the old Spanish, aristocratic, clerical party, to which the president belonged, and which, with the bishop of Leon as chief spokesman, protested against the act of the new congress that subjected the clergy and the other privileged classes to taxes, from which, under the rule of Spain, they had been exonerated. The labors of the congress of 1825 and 1826 were however brought to a successful close, the constitution of 1824 adopted, the country put into a position calculated to secure prosperity within and to protect it from attack from abroad, and spite of the political dissensions, the affairs of Central America proceeded smoothly enough until Sept. 6, 1826, when, at the bidding of the clergy, the president resorted to the arrest of Barrundia, governor of Guatemala, which

created much excitement all over the country, especially in the province of Quesaltenango, where the population rose to arms in October. This insurrection, although it was promptly quelled by the president, became the forerunner of similar popular movements in Honduras and Nicaragua. There the people revolted against the authority of Arce and declared their independence. In order to devise measures for the purpose of allaying the crisis, an extra session was convoked by the president in Nov., but party spirit ran higher than ever, and the politicians, availing themselves of the general excitement, frustrated all attempts of the executive to restore peace to the distracted country, and the congress broke up in the greatest confusion. This became the signal for civil war, which in 1827 raged with great violence between the provinces of San Salvador and Guatemala, and the president, who commanded in person the army against the rebels, was repeatedly defeated at Apopa and Santa Anna. A truce was at length agreed upon in Jan. 1829, but a new and powerful champion of the democratic party who had arisen in the person of General Francisco Morazan, rekindled the revolutionary spirit of the Central American liberals, broke the truce, took possession of the capital, Guatemala, on April 13, and after securing the person and the property of the president, the vice president, Mariano Petronena, the members of the cabinet, the principal prelates, and of about 80 more leading individuals of the same party, nominated Barrundia as provisional president, and subsequently assumed the reins of power himself, under the sanction and applause of the people, while Arce was expelled from the country, together with the archbishop and many of the superior clergy, whom he had chiefly to thank for his ruin.

ARCESILAUS, founder of the New Academy, lived in the latter part of the 3d century. He was a native of Pitane, in Æolia, and was originally intended for a rhetorician, but while pursuing his studies at Athens, became so enamored of philosophy that he determined to devote himself to it altogether. He did not however confine himself to any one school, but studied all the various systems. He was a wit, a poet, and an accomplished orator, as well as a grave philosopher. He was not rich, and yet could afford out of his limited means to be generous to the needy. His enemies, however, charged him with being a voluptuary and a wine-bibber. He was the successor of Orantor, in the chair of the academy of Athens. As he wrote nothing, his opinions were understood imperfectly even by his contemporaries, and are known to us only through the partial and unfair statements of his opponents. But he was not a skeptic in the Pyrrhonic sense of that term, and his celebrated saying, "that he knew nothing, not even his own ignorance," may have been uttered to indicate his humility and diffidence rather than his infidelity. He certainly did not doubt the existence of truth,

nor did he deny the existence of an internal moral monitor, though he may have regarded that monitor as a very fallible guide. In nothing, however, was Arcesilaus more distinguished from the pure Pyrrhonists, than in his predilection for questions appertaining to practical life, and in the undeviating moderation of his tone. He is said to have revived the Socratic method of teaching, and to have cleansed the doctrine of Plato from those impurities with which they had become intermingled after the death of that great philosopher.

ARCH (Lat. *arcus*, a bow), a curved structure supported by its own curve. The length of an arch is much less than its width, as is the case with the arch forming the roof of a door or of a window. When such a structure is long, it is called a vault. However, the quantity of light admitted and of weight supported, either apparent or real, has an influence upon the name adopted. For example, we say the arch of a bridge, and a triumphal arch, because both are above ground and support nothing, and we see the light through and around them; while the same arches, if used for a tunnel in a deep trench, or for a passage between two cellars, would be called vaults. It is supposed that domes were unknown to the Egyptians and the Greeks, the first arched monument on record being the *cloaca maxima* built in the age of the Tarquins. The original Etruscan dome was supported by a few pillars, under which stood the augurs; the object was to protect the priest against the sun and rain, and at the same time allow him to study the horizon and be seen by the people. The Romans scarcely deviated from the semicircle, which is the simplest form of the arch, and, in building it, did not follow true mechanical principles, so that the great strength of their numerous aqueducts, viaducts, and monuments is to be ascribed to their massiveness and to the good cement employed. It was not till the middle ages that the arch was properly built and widely used. At that period, the Christians and the Saracens vied with each other in giving beauty to their temples, and their architects, under the double impulse of religious and of artistic ideas, made architecture a science. By means of the arch, these masters succeeded in building structures of unrivalled beauty with materials which would have been rejected by the Roman architects as utterly worthless. They invented the pointed arch, shaped and ornamented it in a thousand ways, making it seem strong or airy according to its use and the effects of light. Strong abutments are generally found around the monuments of that period, which consist of a succession of arches built, one above the other, from the ground to the top of the monument, the upmost one being used as an aqueduct for the roof-gutters, appearing, from below, as light as if made of tin plate. The roofs of many of these edifices are formed of large arches as main ribs, which sustain smaller arches abutting on them; they are as slender as possible, and so appropriately

shaped and ornamented as to appear a hundred times lighter than they are. The wedge-shaped stones of which an arch is composed are called *voussoirs*; the uppermost is the key stone; the two blocks of masonry on which the arch rests are the *abutments*; the line from which the arch springs is called *impost*; the inner curve, *intrados* or *soffit*; the curve outside the *voussoirs*, *extrados*; the span is the distance between the piers; the distance of the keystone above the impost is the height of the arch. The names of the parts of the arch proper are, the springs of the arch, the haunches, and the crown. When the arch has only to support itself, each *voussoir* sustains the weight of those placed above it, and, consequently, they must be made larger and larger from the crown to the spring; but when the arch has to support weights, the various modes in which they may be disposed require as many different constructions, and the finding of the resulting force acting on each part, is one of the most difficult tasks of the architect, especially as the methods of accomplishing it are among the least definite of the art of engineering. The use of arches in the form of an arc smaller than a semicircle is quite modern, and superior, for many purposes, to older forms. In bridges, for example, it leaves, in ordinary times, a larger passage for boats, and in times of freshet, offers less resistance to the water, and the bridge runs less risk of being carried down. Since the introduction of cast-iron in architecture, arches of that metal and of a single piece have been built; in such cases the arch is used only to please the sight, as the solidity of the structure depends entirely on other portions of the work.—A **TRUMPHAL ARCH** is a monumental structure erected in honor of some celebrated person and his deeds, or to commemorate some great event. They probably originated with the Romans, and *Stertinius* is the first recorded who erected such a monument. Two were built by him, one about 196 B. C. in the Forum Boarium, and another in the *Circus Maximus*. In the year 192 B. C., *Scipio Africanus* built one on the *Clivus Capitolinus*, and in 121 B. C., *Fabius Maximus* erected one on the *Via Sacra*. Of these, none remain. Different writers record 21 as having been built in the city of Rome.—The most celebrated of Roman arches are those of *Augustus at Rimini*, of *Trajan at Beneventum* and *Ancona*; and those of *Titus*, *Drusus*, *Septimius Severus*, and *Constantine at Rome*. That of *Titus* is one of the best. It is situated at the foot of the *Palatine*, and was probably completed after his death and apotheosis, as in the inscription he is called *Divus*. It commemorates his conquest of *Judea*. On the inner sides of the arch are two *basso-relievs*; one exhibiting the emperor in his car drawn by 4 horses, with *lictors* attending; victory following, in her left hand a branch of palm, and in her right a crown of laurel over his head. The horses are led by a figure representing *Rome* with armor, and followed by *magistrates*; the other *basso-*

lievo represents the table of shew-bread, the golden candlesticks of 7 branches, tables of the law, ark of the covenant, and other spoils brought from *Jerusalem*. Remains of Roman arches are to be seen in *Spain*, *Greece*, and other countries. The custom of raising magnificent triumphal arches began under the first emperors.—During the republic, arches were decreed to victorious generals, but not to the dead. When *Augustus* was emperor, the senate proposed to have one built in honor of *Drusus Nero*, who died in *Germany*. *Augustus* consented, and a marble arch was constructed on the *Appian Way*. In modern Italy there is one of *Alfonso* in *Naples*, and one in *Berlin* at the entrance of the palace. But *Paris*, of all modern cities, has the greatest number and the most beautiful. The *Portes St. Denis* and *St. Martin* were erected in 1673–74; the *arc du Carrousel* in the years 1806–9, in honor of the armies of *France*. It is at the west entrance of the *Tuileries*; its height is 47 feet, its breadth 55. Its two principal faces have each 8 *Corinthian columns*, surmounted by statues. The most magnificent is the *arc d'Etoile*, at the extremity of the *avenue des Champs Elysées*, built for the purpose of commemorating the victories of *Napoleon*. It was commenced in 1806, but not completed until after the revolution of 1830. It is in the form of a parallelogram, its height and breadth being each 150 feet. It has 8 arches, the centre one 95 feet, and the side arches each 52 feet in height. On the eastern and western fronts are colossal groups in relief, and also on the frieze. The arch at *Hyde Park* corner with the equestrian statue of the duke of *Wellington*, and *Cumberland gate*, are the only specimens in *England*. In *China* they are numerous. It has been computed that their number is as great as 1,100, of which 200 are very beautiful. They are situated, not only in the cities, but on eminences along the roads running through the empire. Some few of the less beautiful are in honor of distinguished females.

ARCHÆOLOGY, the science of antiquities, properly commences with that branch of geology known as *paleontology*. *Organic* remains attracted the attention of philosophers 500 years B. C.; but until the middle of the 17th century they had not decided whether fossils were the "sports of nature," or relics of once living beings, and some gravely maintained that the petrified bones of elephants were those of fallen angels. It was reserved for *Cuvier* and his successors to unroll the volume of nature rich with the relics of primeval ages, and enable the archæologist to commence his studies with a knowledge of the forms and characteristics of the inhabitants of the preadamite and antediluvian world. With the period subsequent to the deluge begins the special province of archæology, to trace through the primitive arts the history of civilization and social development of man.—During the ages of barbarism men were comparatively isolated from each other. Their weapons, uten-

sils, and ornaments, were few, and formed of wood, bone, and stone, which each carved out for himself. The use of metals was the first step in civilization. These materials afforded ample room for development of skill in workmanship, and hence new tastes and arts were formed. The supply was limited both as to quantity and locality; this necessitated a system of barter, the beginning of trade. Gold was probably the first metal wrought, on account of its attractiveness and superficial deposit. Tin and copper must have been used at a very early period in Great Britain. Here were the materials for brass and bronze. The skill for combining them was soon imported from Egypt. The intercourse between these nations is spoken of by Herodotus and Polybius, and their accounts confirmed by the bronze relics of similar shape found in both countries. Greece probably acted as a medium of communication. This is inferred from several circumstances, among others the fact that the leaf-shaped swords depicted upon Grecian vases appear to be accurate representations of those used by the ancient Britons, and the nations of northern Europe. The Greeks attained great perfection in metallurgic arts. Homer describes coats of mail, goblets, tripods, &c., on which figures were represented. Considerable progress must have been made in working metals before iron became in much use. The Romans were early workers in this metal; so also were Celtic and Germanic tribes, from one of whom, the Norci, some have supposed they derived their knowledge of steel. It is more probable that they owed this metal to Egypt or Assyria. Written language was contemporaneous with metallurgic art. Hieroglyphics probably belong to the age of copper, enchorial writing to that of iron. This branch of archæology must be studied under the heads of ethnography and paleography.—Numismatics is a branch of archæology valuable in illustrating history. Plutarch was the first who thus applied it. By the aid of coins and medals, dates can be determined, series of kings traced, weights and currencies ascertained, progress in art noted, &c. As an illustration we may refer to the literary history of the two books of Maccabees. These books are the only historical link between the old and new dispensations, the only record of the fulfilment of the promises which foretold the restoration and continuation of the Jewish sceptre till the Messiah should come. Owing to the discrepancies between their chronology and that of classic history, they were rejected as non-authentic until Erasmus Fröhlich tested their accounts by the contemporary and indisputable evidence of medals, and established their truth and accuracy.—Heraldry is another trustworthy aid which archæology offers to history. Its symbolic records supply a vast amount of collateral evidence.—Archæology has revealed much that is interesting respecting the ceramic art, or pottery. Dibutades of Sicyon has been supposed

to have been the inventor of modelling in terracotta; Coræus of Athens, of pottery; Talus, nephew of Dædalus, of the potter's wheel; but although the potters of Corinth, Ægina, Samos, and Athens, did much to perfect their art, yet they must yield the honor of their inventions to the Egyptians and Phœnicians.—Glass, according to Pliny, was accidentally discovered by some Phœnicians. Bernard Palissy attributes it to the Israelites. It is tolerably certain that the first manufactories were in Egypt. It was thence introduced into Sicily and Etruria, and from this latter country the Romans probably derived their knowledge of it. Large quantities of glass vessels have been found in the catacombs, exhibiting proof of much skill in painting and staining. The celebrated Portland vase shows the perfection to which this art was carried. This is composed of 2 layers of glass, representing white figures sculptured in relief upon a blue ground, and is so perfect an imitation of an onyx cameo, that for a long time even the most scientific were deceived. From Egypt and the adjacent countries are derived the earliest specimens of engraving, not only upon metals, but upon glass and gems. These last were principally used for signet rings. Every Babylonian, according to Herodotus, had his signet; so also had the Egyptians, for each one sealed his own sacrifice. The Etruscans, who were very fond of personal ornament, derived much of their skill, both in design and execution, from the Babylonio-Phœnician artists. In Micali's engravings there is a collection of buckles, diadema, necklaces, rings, &c.; some very large and adorned with engraved lions, birds, sphinxes, and combatants; the designs show their foreign origin, the setting is Etruscan. All departments of ancient art, all relics of by-gone ages, even when apparently slight and trivial, are to the archæologist full of light, illuminating the dark records of the past, and bringing into full relief events which else had been buried in oblivion, or verifying annals which have been cast aside. A case in point is Manetho's chronicle of the kings of Egypt, which he compiled from the records of the temple of Heliopolis in the time of Ptolemy Philadelphus. His history, until lately, was rejected as a tissue of fables, but the translations of Egyptian hieroglyphics within a few years, have corroborated his statements as more to be relied on than even those of Herodotus.—Two truths are taught by archæology: one, that no nation is self-made, and that international intercourse is absolutely necessary for the development of art and civilization; the other, that art and civilization originated in the East. This is contrary to the theory of art historians of the last century, who claimed for Greece the most absolute originality of conception and design. But every discovery in India, Assyria, and Egypt, confirms their position as pioneers in the world's progress. Justice must be meted to all. The Semitic nations possessed brilliant imagination, gigantic and ready pow-

as of invention; but they had not the faculty for adaptation and development which characterized the Indo-Europeans. The former invented, the latter perfected.

ARCHAISM, is the use of an antiquated expression. It may be either a word, declension, conjugation, or a form of speech. It is sometimes used with good effect in poetry, but it must be but seldom employed.

ARCHANGEL. I. The name of a government on the White and the Polar seas, the furthest north in European Russia. Lapps, Finns, and Samoyeds, many of them still heathen, form the native population, living independently among the conquering Russian settlers. The country is covered with immense forests, which afford excellent materials for ship building. The soil can only be cultivated in summer; it yields vegetables, oats, barley, and other hyperborean products. The area is more than 80,000 square miles; the population about 300,000. II. **ARCHANGEL**, or the city of the archangel Michael, named after a monastery built there in 1584, is the capital of the government. It is situated on the river Dwina, 40 miles from its mouth. It has about 15,000 inhabitants, a military and a civil governor, an archbishop, a high school or gymnasium, and a navy yard, and several private ship-yards. For nearly a century and a half Archangel was the principal and indeed the only mart of the Russian import and export trade, as, previous to the construction of St. Petersburg, the empire had no other considerable port. As early as the time of Queen Elizabeth, English merchant ships occasionally entered the mouth of the Dwina, and they were soon followed by those of the Dutch and the German Hanse. Thus, in the year 1670, bills of exchange, though unknown elsewhere in Russia, were introduced in Archangel. The harbor is large and one of the best in northern Europe, with the exception of a sandy bank at the entrance. Archangel is still one of the principal points for the trade with the interior of Russia and with Siberia, the Dwina being connected by canals with the Volga, and thus with Moscow and with Astrakhan. The ice disappears in April, and in May foreign vessels—now including many from the United States—arrive; the navigation closes in September. The principal objects of trade are fish, fish-oil, tallow, linseed, furs, hides, lumber, wax, iron, linen, bristles, and caviare. During the late eastern war the harbor of Archangel, defended by the fort Nowodwiesk, resisted the English attacks. Indeed the allies were rather unsuccessful on the shores of the White sea. Archangel, being able to receive the largest men-of-war, has now become one of the chief places for the construction and maintenance of the Russian navy, the Black sea being almost shut for that purpose by the treaty of Paris (1856). The buildings of the admiralty or navy-board, as well as the barracks for sailors, are situated on the island of Solombalak; they have lately been considerably enlarged. In

summer Archangel sends out numerous fishing boats, and, in winter, hunters to the utmost northern regions, such as the Spitzbergen, Nova Zembla, and the mouth of the Lena in Siberia. A special company has been formed in Archangel for the herring fishery.

ARCHBISHOP (Lat. *archiepiscopus*), the chief of the bishops of an ecclesiastical province. The dignity originated by degrees in the progress of the hierarchy. As the bishops of the cities, especially of those churches which had been founded by the apostles, acquired authority over adjacent country congregations, so they themselves became dependent upon the bishops of their metropolis; and thus a few chief cities, which were the centres from which Christianity spread into the towns and countries, became also the centres of authority. The first formal sanction of this authority was by the council of Nice, A. D. 325, which distinguished the bishops of the capitals as metropolitans, and the more eminent of the metropolitans were termed archbishops or patriarchs. In the 8th century the title was applied to every metropolitan and to the more eminent of the bishops. Since that time, in Roman Catholic countries the archbishops have had a more definite position in the hierarchical scale, although their prerogatives have considerably varied. They possess a double character, exercising over their own diocese ordinary episcopal functions, and also having a jurisdiction over the bishops of their province, who are hence termed suffragans. They claim the right of calling provincial synods, of presiding at them, and publishing their acts; also the right of supervision, and an appeal lies to them from the decisions of the bishops. The archbishop also supplies benefices left vacant by the bishops for a longer time than that prescribed by the canons, and receives the bulls of the pope which he announces to his suffragans. He enjoys also other prerogatives, as the use of the *pallium*, a decorated robe symbolizing superior power, the privilege of having the archiepiscopal cross carried before him, except in the presence of the pope or his legate, and of pronouncing the benediction through the whole extent of his province. His civil rank is fixed by special law, and his ecclesiastical rank is next to that of cardinals.—The archiepiscopal dignity has been retained in several Protestant churches, particularly in the Anglican church. The ecclesiastical government of England is divided into 2 provinces, Canterbury and York. The archbishop of Canterbury is the chief primate and metropolitan of all England, first peer of the realm, and member of the privy council. It is his prerogative to crown the king, and he is consulted by the ministry in all ecclesiastical affairs, and generally delivers in parliament the sentiments of the bench of bishops. The archbishop of York crowns the queen, and is her chaplain. He also belongs to the privy council, but his inferiority to the archbishop of Canterbury is recognized in his

being styled simply primate of England, while the latter is styled primate of all England. The 2 archbishops have precedence of all temporal peers, excepting those of the blood royal, and excepting the lord chancellor, who in processions is interposed between them. The archbishop of St. Andrews was the metropolitan of Scotland while episcopacy prevailed in that country, and the archbishop of Armagh is primate of all Ireland. In Denmark the bishop of Copenhagen has precedence of the others, but the bishop of Zealand is the metropolitan, and anoints the king. In Sweden the bishop of Upsal is the archbishop. In France there are now 15 Catholic archbishops; in Italy, 88; in Spain, 8; and in the United States of America, 7. In Germany, 8 of the archbishops, those of Treves, Cologne, and Mentz, were electors of the empire. Archbishops in the Catholic church are nominated by the archiepiscopal chapters, and confirmed by the pope. In the church of England they are appointed by the ministry in the name of the crown.

AROHDALE, JOHN, governor of Carolina, lived in the latter half of the 17th century and the beginning of the 18th. He was a quaker and one of the proprietors of Carolina, by whom he was deputed to act as governor of the province, after Lord Ashley had declined the office. He arrived in the country in 1695, was received with every demonstration of joy, and in the course of a year, by wise and judicious measures, succeeded in restoring order and contentment in the place of confusion, and in developing very considerably the resources of the country. To him is due the introduction of rice, now one of the most important staples of the Carolinas. He remained in the province but a year, and in 1707 published a descriptive and historical work on it.

AROHDEACON, an ecclesiastical dignitary, the assistant of the bishop. At the beginning of the 4th century there was in almost every diocese an archdeacon, invested with authority by the bishop, particularly in the administration of temporal affairs. To him belonged the care of preserving public order and propriety during the divine service, of guarding the ornaments of the church, and of tending the poor throughout the diocese. He was called the hand and the eye of the bishop, and, from his influential position, became recognized as superior to the priesthood, though retaining only the deacon's consecration. As overseer of the deacons and of the younger clergy who were not yet consecrated, he had the supervision of their education and studies, so that a certificate from him was required before their ordination to the priesthood. When the dioceses began to enlarge, and the metropolitan churches to attach to themselves the neighboring country congregations, it became necessary to divide the diocese into a number of archdiaconates. The archdeacons increased in independence and power till the 18th century, when they claimed a jurisdiction proper to themselves, and the

right to appoint their own subordinates. Though their power was not developed in every quarter to an equal extent, it was yet always hazardous to that of the bishops, and a reaction against it arose. Several synods sought directly to limit their prerogatives, and it was finally decreed by the Council of Trent that henceforth the archdeacons should hold their right of supervision only by the bishops' permission. From that time they have gradually disappeared from many dioceses. England is divided into 67 archdiaconates, and it is imperative upon each archdeacon to visit his district at least once in 8 years. It belongs to him to see that the churches and chancels are in repair, that every thing is done conformably to the canons, and to hear from the churchwardens any representations of public scandal. The revenue attached to this office is very small, so that it is usually held by persons who have other benefices. The archdeacons are appointed by their respective bishops.

AROHDEKIN, RICHARD, a Jesuit and theologian, born at Kilkenny, in Ireland, in 1619, died at Louvain in 1698. He became a Jesuit in 1642, and spent the greater part of his life in the Belgian provinces, preaching the theology and philosophy of the order in many places. He published a "Treatise on Miracles" and *Controversia Fidei ad facilem Methodum reducita*, a work which had a great reputation, and went through numerous editions.

AROHDUKE. Early among the Germans the chiefs or kings appointed from their immediate companions dignitaries of various rank, and thus we find among the Franks archdukes of Austrasia; the title also existed in Lorraine and Brabant, and was especially assumed by the house of Austria, without, however, a positive historical record as to when or why it was granted to them by the emperors. The Kahlenberg branch of the house of Austria or Hapsburg has used the title since the year 1156, but without special privileges. It became hereditary in that line after the promulgation of the golden bull, but the electors did not recognize its validity till the year 1458. It is supposed, however, that Maximilian I. extended this dignity to his branch of the family, attaching to it various privileges, and placing the archdukes in every respect above all other crowned vassals of the German empire. The Hapsburgs have preserved it ever since; and since the destruction of the feudal Roman-German empire in 1806, all the male and female members of the house of Austria have been called archdukes or archduchesses.

ARCHELAUS. I. Surnamed *PHYSGIOS*, or the Naturalist, is by some supposed to have been a native of Athens, by others of Mileta. He flourished in the 5th century, and was a pupil of Anaxagoras. Archelaus is said to have been the first philosopher who taught physics in combination with ethics, at least in Greece, whence, probably, his synonyme. His way of accounting for the existence of this lower world

and its inhabitants, was somewhat singular. He held that the antagonism of heat and cold caused the separation of fire and water, and produced a slimy mass of earth; that while this mass was acquiring consistency, the action of heat upon its moisture generated animals, which were originally nourished by their native mud, and gradually became capable of propagating their species; that these animals were all endowed, though in different degrees, with intellect, and that man, separating in time from his brother animals, rose above the condition of a brute, and established, at length, laws and communities. His most remarkable ethical doctrine, and that which formed the basis of his moral system, was that "right and wrong are not from nature, but from custom." After the banishment of Anaxagoras from Athens, Archelaus established himself in that city as a teacher of this mixed philosophy, in which he is said to have instructed Socrates and Euripides. II. A king of Macedonia from 418 B. C. to 399 B. C. He was, according to Plato, an illegitimate son of Perdiccas II., and a monster of cruelty. Thucydides, however, appears to know nothing of his revolting vices, and evidently considers him one of the best of the Macedonian kings. If we may believe this great authority, Archelaus did more for the internal improvement and future grandeur of his kingdom than all his predecessors. By erecting fortresses, forming roads, and adding to his military strength, he established the basis on which, in after times, the genius of Philip and Alexander raised the superstructure of Macedonian power. He also instituted public games at *Agæ*, or *Dium*, in imitation of those at *Olympia*, which he dedicated to the *Muses*, and *Zeus*. Even his enemies admit that he was a lover of literature, science, and the fine arts. His palace was adorned with paintings by the greatest Grecian masters, while Euripides, Agathon, and other distinguished men, as well as poets as philosophers, did not disdain to become his guests, and to accept him as a patron. Archelaus is said to have been slain at a hunting party, by his favorite, *Oretus*, but whether he was killed accidentally, or murdered deliberately, is not certainly known. III. Son of Theodorus, was made governor of *Susiana* by Alexander the Great. On the distribution of the provinces, after the death of his sovereign, he received *Mesopotamia* as his portion. IV. A sculptor, was a native of *Priene*, and the son of *Apollonius*. He is supposed to have lived in the reign of *Claudius*. He made, probably, for that emperor the marble bas-relief representing the apotheosis of *Homer*. This celebrated work is now in the British museum, and is worthy of being ranked with the most exquisite productions of ancient Greece. V. The greatest of the generals of *Mithridates*, was by birth a Cappadocian. He first appears in history as commander of the army which his master had sent against *Nicomedes*, king of *Bithynia*, whom he encountered in *Paphla-*

gonia, and completely defeated. On the outbreak of the first *Mithridatic* war, he was dispatched with a powerful naval and military force into Greece, where he subdued many of the *Ægean* islands and compelled the Athenians to take part against the Romans. But when *Sylla* assumed the conduct of the war against *Mithridates*, the triumphant career of Archelaus terminated. At *Chæronea* and *Orchomenos*, in *Boeotia*, his Asiatic myriads were totally overthrown, and almost annihilated, and he was himself driven, after each defeat, to become a fugitive, and elude his enemies by concealment. *Mithridates* now saw the propriety of suing for peace, and commissioned Archelaus to negotiate with his conqueror. The two generals met at *Delium*. Before proceeding to business *Sylla* is said to have vainly endeavored to induce Archelaus to betray his sovereign. Afterward a preliminary treaty was concluded, which was to be ratified if approved by *Mithridates*. It was not approved by him, but *Sylla* passing over to Asia, by the advice of Archelaus had an interview with the king at *Dardanus*, and there made peace with him. This peace was chiefly brought about by the mediation of Archelaus, and was so favorable to the Romans, in the estimation of his master, that henceforward the general was regarded as a traitor, and had ultimately to take refuge with his former antagonists from the vengeance of *Mithridates*. He was well received by the Romans, and had many favors conferred on him by the senate, but from the period of his flight he disappears from public life, and nothing more of interest is known concerning him. VI. Son of Archelaus, the general of *Mithridates*, was made priest of the goddess *Bellona* at *Comana*, in *Cappadocia*, by *Pompey* in 68 B. C. This office conferred on him the power of king over *Comana* and its territory. But Archelaus was ambitious of greater honor than attached to the high-priesthood of *Comana*, and when *Berenice*, queen of *Egypt*, proclaimed that she was desirous of marrying a prince of royal blood, he pretended to be the son of *Mithridates Eupator*, and became a suitor for her hand. His suit was successful, and Archelaus presently found himself the husband of *Berenice*, and king of *Egypt*. But he did not long enjoy his new dignity. *Gabinus*, the proconsul of *Syria*, having espoused the cause of *Ptolemy*, marched an army into *Egypt*, where a battle was fought in which Archelaus lost his crown and life after a reign of only 6 months. VII. A Greek epigrammatic poet who flourished in the reign of *Ptolemy Philadelphus*, and is supposed to have been a native of *Chersonesus* in *Egypt*. He is said to have epigrammatized stories for the amusement of *Ptolemy*, and to have written poems of a similar kind on strange animals and paradoxical subjects. The best edition of the extant fragments of the works of Archelaus, is that of *Westermann*. VIII. Son of Archelaus the priest, succeeded to the office of his father at *Comana*. In 51 B. C. having aided the in-

surgents in Cappadocia with money and men, he was expelled from his dominions by Cicero, who was then proconsul of Cilicia. After the termination of the Alexandrian war, he was deprived of the high-priesthood of Comana by J. Caesar, who gave it to one of his own adherents. IX. Son of the preceding, was made king of Cappadocia by Anthony, in 84 B. C. He is said to have owed his crown to the beauty of his mother, Glaphyra. The downfall of his patron caused no unfavorable change in the fortunes of Archelaus. Augustus confirmed him in the possession of his kingdom, and even added to it a portion of Cilicia and Lesser Armenia. Archelaus, during this emperor's reign, was once accused at Rome by his own subjects, but he had Tiberius himself for an advocate on the occasion, and was of course acquitted. But the imprudence of Archelaus while sojourning in Rome transformed Tiberius into a bitter enemy. He had been so impolitic as to manifest more esteem and respect for Caius Cæsar than Tiberius, and when the latter became emperor he did not forget the slight of Archelaus. He invited the king to visit once more the imperial city, and, as soon as he came, had him arrested and accused before the senate of meditating treason and rebellion. His old age saved his life, but he was compelled to spend the remainder of his days in Rome, where he died soon after. On his death Cappadocia ceased to be a kingdom and was converted into a Roman province. X. A son of Herod the Great, was proclaimed king by the army on the death of his father. But he declined to assume that dignity without the sanction of Augustus. After his accession he made many fair promises to the people, which, however, he never fulfilled. Presently a sedition broke out, in the suppression of which he manifested the cruelty of his nature. He then went to Rome to solicit from the emperor the confirmation of his title. In this object he did not succeed. The title of king was denied him, and half the kingdom given to his brother. He was, however, left the sovereignty of Judea, Samaria, and Idumæa, with the title of ethnarch. On his return from Rome he evinced his contempt for the Mosaic law by taking to wife Glaphyra, his brother Alexander's widow, who had children living by her former husband. In the 10th year of his reign he was accused by the Jews, before Augustus, of various crimes, and being found guilty was deprived of his dominions, and banished to Gaul, where he died.

ARCHENHOLZ, JOHANN WILHELM VON, a German author, born at Langenfurt, a suburb of Dantzic, in 1741, died at Hamburg in 1812. In 1760 he entered the Prussian army and took part in the 7 years' war. In 1768 he left the service and betook himself for the next 16 years to travelling over Europe. On his return to Germany he devoted himself to literary pursuits, and lived successively at Dresden, Leipzig, Berlin, but chiefly at Hamburg. His work on "England and Italy" gave him some repu-

tation; his histories of "Queen Elizabeth" and "Gustavus Vasa" enjoyed also much popularity, but his most valuable work is that which he wrote on the "Seven Years' War." His "Annals of British History since 1788" are piquant and full of anecdote. In his "Historical Essays" he gives in the second volume an interesting account of the filibusters and pirates who infested the West Indies during the 18th century. From 1782 to 1791 he edited a periodical called *Literatur und Völkerkunde*, and from 1792 to the time of his death he was editor in chief of the *Minerva*. He was not a man of great learning or erudition, but of vivid imagination and quick perception.

ARCHERY, the art of shooting with the bow. This is, probably, the oldest and most general of all the means and appliances of war and the chase. The first direct mention which we find of the bow, is the passage in Genesis xxvii., where Isaac said to Esau, "Now, therefore, I pray thee take thy weapons, thy quiver and thy bow, and go out into the field and take me some venison;" but there can be no doubt, from other reasons, that it was already a well-known instrument, probably before the deluge, but at least as early as when Nimrod "began to be a mighty one on the earth;" and that it was one of the principal weapons of destruction at the battle of the kings in the vale of Siddim, as it has continued to be with all oriental nations to the present day.—Next earliest to, or rather contemporaneous with, the historical books of holy writ, come the marvellously preserved testimonies borne to their truth by the sculptures of Nineveh, in which the bow is represented as the favorite weapon of the king and his chief warriors, whether for war or for the chase. In these sculptures it is a long and powerful instrument, drawn to the ear of the shooter, like the famous English longbow, and carrying an arrow not apparently inferior in size to the cloth-yard shaft of the famous island archers.—In Greek, as in Roman warfare, the use of the bow never played a prominent part; among the former nation, archery being confined, for the most part, to the islanders, particularly those of Orete, and scarcely considered a fitting pursuit for freemen, who always served in the heavy-armed infantry, which formed the line of battle, and constituted the effective force of the Hellenic armies. In the Iliad, Teucer, the son of Telamon, king of Salamis, and Pandarus the Lycian, are the only two warriors particularly recorded as celebrated for their skill with the bow; and even these play but a secondary part, lurking behind the shields of the stouter chiefs and shooting from ambush, instead of boldly contending, man to man, in the front ranks. In the case of the latter, however, Homer describes both the bow and the manner of using it; from which it sufficiently appears how very inferior an instrument it was to the oriental, much more to the Anglo-Norman longbow. The weapon of Pandarus was made of the horns of a wild goat, polished, and fast-

ened together in the centre by a golden band or circlet; when bent, it was drawn back against the regular curvature or natural growth of the horn, and the string and feather of the arrow was only drawn home to the breast, instead of the right ear, allowing of course the use only of a comparatively short arrow, and giving but a very inferior extension to the bow.—The Greek bow, in fact, was an inconsiderable weapon, and so well were they aware of the fact, that even where they were opposed to troops famous for their proficiency with the bow, they rarely endeavored to confront their archery with archery, but sought other means to silence their shot.—At the battle of Plataea, where the Greek allies, who had no cavalry at all and scarcely any light troops worthy of mention, suffered prodigiously during the first two days' fighting from the arrows of the Persians, the Athenians were the only people who had archers in the field, and they were probably not Greeks, but the public slaves—*Demostis*—mostly Scythians or Thracians by birth, who formed the city guard, dwelt in tents on the Areopagus, and were officered by captains with the title of *tozarche*, masters of the bows. These men, being mingled with the files of the *hoplita*, or heavy foot, under Olympiodorus, did good service, and outshot the famous Persian bowmen.—Again, in the celebrated retreat of the ten thousand, Xenophon soon found that his Cretans could not shoot half so far as the Persians, and came yet shorter of the terrible Carduchian mountaineers of Koordistan, who fought with 6-foot bows and arrows of 2 cubits' length, and drew their bow-strings to the ear; wherefore he disbanded his bowmen, and organized a force of Rhodian slingers, who slung leaden bullets instead of stones, so as to overpower even the arrow shot of the Carduchians.—Among the Romans, archery was even less practised than among the Greeks; and, until a late period of their history, they never appear to have used the bow as an arm of service, the light javelin being the weapon of their skirmishers. But skirmishing was not a part of the Roman tactics, when they could avoid it, their chief aim and desire being to come as quickly as possible to close quarters, and to resolve the battle into a series of single combats, with the buckler and stabbing broadsword; when the personal prowess and thorough drilling of their men speedily settled the question.—In the latter days of the republic, however, Cretan and even Scythian archers, Rhodian and Balearic slingers, and the Gallic horse—for the Romans were as deficient in cavalry as they were in bowmen and skirmishers—served in their ranks; and during the later days of the empire, Goths, and even Huns, mercenaries or auxiliaries, were largely employed in the heterogeneous masses, which were still called Roman armies, although Romans there were few or none in their composition.—The oriental nations, however, still preserved to the end their superiority in this arm. Cræsus fell; Mark Antony, that consummate

soldier, barely escaped with his army after an unparalleled retreat; and Julian, the greatest general of the later empire, lost his life, leaving his empire to be barely saved from utter ruin by his successor, Jovian, in the unequal contest between the incomparable infantry of the legions, and the myriads of horse-archers, indestructible as swarms of locusts, which formed the strength of the hosts of the Asiatic tyrannies.—The great period of archery, however, arrived with the accession of the Norman line to the English crown, and from that time dates the supremacy of the longbow as a military weapon for infantry, and the perfection of skill in its use, both for range and penetration, not to dwell on its extraordinary accuracy, which enabled it, long after the introduction of musketry, to retain its place as the chief of infantry arms.—Originally a weapon of the Norse tribes, it was brought by Duke Rollo and his followers into southern Europe, and skill in its use was considered as essential a part of the education of a Norman knight, as it was of a Persian prince, when to ride, to shoot, and to speak the truth, were esteemed the first things to be inculcated by the preceptors of youthful royalty. It is related by William of Malmesbury, that not a man in the Conqueror's army "could draw his bow, which himself could bend when his horse was on full gallop;" and the Norman archers, whom the Saxons took at first to be priests on account of their being so closely shaven, did good service at Hastings, where the Saxons, being all infantry, and fighting with crossbows and *gissarmes*, or heavy bills and battle-axes, were entrenched within palisaded lines, which the Norman chivalry were unable to force. The palisades at first prevented the effect of the Norman arrows, when shot in point-blank volleys; but when they began to send their flight-shots perpendicularly into the air, so that they should strike on their descent, they galled the defenders so severely, that, partly owing to their distress on this account, partly owing to a feigned retreat by the cavalry, the Saxons broke out of their defences to come to hand and hand encounter, when they were ridden down by the barbed horses.—It was not, however, until the gradual amalgamation of the two peoples into one nation was somewhat advanced, and until the Saxons had adopted the Norman longbow, so that it became the national English weapon, and that "bills and bows," the weapons of the two tribes which had fought in opposition at Hastings became the call to arms of the English infantry, that the bow achieved its full renown.—This began to be the case at a very early period, since the Saxons, who fled to the forests and morasses, which at that time covered one-half the islands, for shelter from the intolerable oppression of their Norman masters, immediately adopted this weapon, and acquired such fearful dexterity with it, that the weapon they had themselves introduced became the sharpest thorn in the side of the invaders, and continued

to work them sore damage, until Normans and Saxons were at length happily merged into one homogeneous English nation. Thenceforth it became the terror of the enemies of England. Not a country of the European continent, not even the Saracens during the crusades, but learned the superiority of the island archers, and soon came to avoid them as the most formidable of all enemies. In Spain, France, the Netherlands, even among the Alpine fastnesses of Switzerland, the English longbow was known, and the twang of its fatal cord universally dreaded. In all the extraordinary pitched battles of the English Plantagenets on the soil of France, won, contrary to all expectations, and against odds the most imposing, it was the English infantry and the English longbow which did the work. And the mere circulation of a report that any one of the fair-haired Henrys or Edwards was at sea with 8,000 or 10,000 archers, was enough to set the alarm-bells ringing from Calais to Notre Dame, and to call the feudal militia at once into the field. Philip de Comines acknowledges that the English archers excelled those of every other nation; Sir John Fortescue declares that "the safety of the realm of England standeth on its archers;" and there is scarce an English reign, from that of Edward I. to that of Elizabeth, and her successor, James I., in whose time the use of the bow began to decline, in which orders to the sheriffs of the counties did not issue—many of which have been preserved—for the providing of bows and bundles of arrows, and practising the yeomanry of the shires in archery, as a precautionary measure against the casual breaking out of war. So late as to nearly the end of the 16th century, the longbow was the principal arm of the infantry soldier of England. The longbow was made by preference of Spanish yew; but English yew, and, when that could not be obtained, ash, was used in its place. The proper length of the bow was the height of the archer, and the arrow half the length of the bow; the strength of the weapon was also proportioned to the muscular strength of the archer. From 60 to 90 lbs. was the force requisite to draw a cloth-yard arrow to the head on a 6-foot bow.—Arrows were made of sound ash for military use, of oak, horn-beam, or birch, for pastime; but a yew arrow, that would weigh from 20 to 24 pennyweights, was counted the best, and was feathered with two white feathers of a gander and one gray one from a goose, the latter being the longest, and held uppermost on the bowstring. English arrows had at first forked, and then broad heads for warfare; but the round-pointed or bodkin-head was considered best for accurate shooting. The arrows were reckoned by sheaves, each sheaf containing 24 arrows, which were carried in covered quivers. In old times, arrows were often feathered, as described by Chaucer, from the peacock's tail. They were ordained by a proclamation of Henry IV. to be well boiled or braised, and the points to be hardened

with steel. The bowstrings were of plaited silk.—The power of flight, correctness of aim, and penetration of these terrible missiles, were prodigious. In shooting matches, 800 yards was the common range, and the ordinary mark was a straight willow or hazel rod, as thick as a man's thumb, and 5 feet in length; and such a mark as this a really good archer held it shame to miss.—When shooting together, as it was called, or, as we should say, in volleys, they occasionally discharged their arrows at a much longer range, particularly when shooting from upper ground, or at an elevation, and with fatal effect.—At 200 yards, no armor but the best Spanish or Milan steel-plate could resist the English arrow; and the legends of men and horses shot through and through, are proved by corselets of the stoutest plate, preserved in the collections of the earl of Pembroke, at Wilton, Dr. Meyrick, and others, where the shafts have been driven through the breastplate and the whole body of the wearer, and then through the steel backplate, not inferior in strength to the breast.—The following graphic description of the battle of Crécy, from the old translation of Froissart, by Lord Berners, so admirably illustrates the effect of the shot of a longbow, that no excuse is needed for quoting it entire: "When the Genoese were assembled together, and began to approach, they made a great leap and cry to abash the Englishmen, but they stood still, and stirred not for all that. Then the Genoese again the second time made another leap and a fell cry, and stepped forward a little, and the Englishmen removed not one foot. Thirdly, again, they leaped and cried, and went forth till they came within shot, then they shot fiercely with their crossbows. Then the English archers stepped forth one pace, and let fly their arrows so hotly and so thick, that it seemed snow. When the Genoese felt the arrows piercing through heads, arms, and breasts, many of them cast down their crossbows, and did out the strings, and returned discomfited. When the French king saw them fly away, he said, 'Slay these rascals, for they shall let and trouble us without reason.' Then you should have seen the men-at-arms dash in among them, and killed a great number of them; and ever still the Englishmen shot where as they saw the thickest press; the sharp arrows ran into the men-at-arms, and into their horses, and many fell, horse and men, among the Genoese; and when they were down, they could not relieve again. The press was so thick that they overthrew one another. And also among the Englishmen there were certain rascals that went afoot with great knives, and they went in among the men-at-arms, and slew and murdered them as they lay on the ground, both earls, barons, knights, and squires, whereof the king of England was after displeased, for he had rather they had been taken prisoners."—This account of one battle is, in fact, the account of all which were fought victoriously by the English against the French and

the Scots, during the middle ages. Crécy, Poitiers, Agincourt, and 60 other actions, of less note on the soil of France; Halidon Hill, Solway Moss, Northallerton, and Neville's Cross, in Scotland, or on the frontiers, were all fought and won in the same manner, and on the same principle, by the archery or independent yeomanry of England, the bills and axes of the footmen and the charge of the horse being brought into play, secondarily only, in order to complete the defeat already inflicted by the bowmen. The few instances in which an English army of the middle ages, strong in its archery, was defeated, such as Bannockburn, almost a solitary case in point, occurred where the archery, having neglected to fortify their front with a palisade or *cheval-de-frise* of iron-shod stakes, were charged by horse which they were unable to resist for want of long weapons and of defensive armor; for the brigantines or light scale jackets of the bowmen could no more resist a lance-thrust or the sweep of a two-handed sword than could a silken vest. Long after the introduction and complete success of musketry, which may be said to date from the battle of Pavia, after which chivalry and the feudal power of an aristocratic cavalry were at an end, archery still continued to be cherished in England, and regarded as the mainstay of the national defence (just as the rifle was considered but a few years since in the United States), as is shown by a curious proclamation, in manuscript, of the times of Elizabeth, which gives, perhaps, the best account now in existence of an archer, with all his necessary appendages. "Captains and officers," it runs, "should be skilful of that most noble weapon, and see that their soldiers, according to their draft and strength, have good bows, well stringed, and every string whipped in their notch, and in the middles rubbed with wax; bracer and shooting glove; some spare strings trimmed as aforesaid; every man one sheaf of arrows with a case of leather defensible against the rain; and in the same 4 and 20 arrows; whereof 8 of them should be lighter than the residue, to gall or astonish the enemy with the hail-shot of light arrows, before they shall come within the danger of the harquebuss-shot. Let every man have a brigandine, or little coat of plate, a skull or huspyn, a mail of lead 5 feet in length, and a fusee, and the same hanging by his girdle with a hook and a dagger. Being thus furnished, teach them by musters to march, shoot, and retire, keeping their faces upon the enemy's. Sometimes put them into great numbers as to battle appertaineth, and thus use them oftentimes practised until they be perfect. For those men in battle or skirmish, cannot be spared. No other weapon can compare with the same noble weapon." Nor does this praise seem extravagant or unwarranted by the truth, when we look at its success in the hands of those to whom that proclamation was addressed. Yet it is something singular, how purely national a weapon the bow was, at this period of its greatest effectiveness, no other

nation ever having shown themselves able to acquire such mastery of the weapon as should give them any chance of coping on even terms with the English; although the kings, both of France and Scotland, used every imaginable incentive to promote the use of the bow and the cultivation of archery practice in their respective kingdoms. Roger Ascham published, philosopher and grave scholar that he was, a code of instructions to the archer, which are still applicable and excellent for those who practise this ancient art, as a graceful accomplishment and exercise; and first of all he recommends a graceful attitude. "The archer should stand," he says, "fairly and upright with his body, his left foot at a convenient distance before the right; holding the bow by the middle, with his left arm stretched out, and with the first 8 fingers and the thumb of the right hand upon the lower part of the arrow affixed to the string of the bow. In the second place, a proper attention is to be paid to the notching, that is, the application of the notch at the bottom of the arrow to the bowstring." We are told that the notch of the arrow should rest between the forefinger and middle finger of the right hand. Thirdly, our attention is drawn to the proper manner of drawing the bowstring. "In ancient times," says Ascham, "the right hand was brought to the right pap, but at present it is elevated to the right ear. The shaft of the arrow, below the feathers, ought to be rested on the knuckle of the forefinger of the left hand." The arrow was to be drawn to the head, and not held too long in that situation, but neatly and smartly discharged, without hanging upon the string. Among the requisites necessary to constitute a good archer, are a clear sight steadily directed to the mark, and proper judgment to determine the distance of the ground; he ought also to know how to take the advantage of a side-wind, and to be well acquainted with what compass his arrows would require in their flight. Courage is also an indispensable requisite, for whoever, says our author, shoots with the least trepidation, is sure to shoot badly. One great fault he complains of, which young archers generally fall into, and that is, the direction of the eye to the end of the arrow, rather than to the mark; to obviate this evil habit, he advises such as were accustomed, to shoot in the dark, by night, at lights set up for that purpose. He then concludes with observing that bad tutorage was rarely amended in grown up persons; and therefore he held it essentially necessary that great attention should be paid to the teaching of an archer properly, while he was young; "for children," says he, "if sufficient pains be taken with them at the outset, may much more easily be taught to shoot well than men," because the latter have frequently more trouble to unlearn their bad habits than would have been primitively necessary to teach them good ones. For all military purposes, and indeed, for all practical purposes whatever, the bow has long ceased to be of use

to any civilized nation, although archery is still kept up as a popular accomplishment and sportive exercise, in which even ladies often join and meet with great success, in the British islands. The last time bows were seen as weapons of civilized war, was when the allied troops were in Paris after the abdication of Napoleon at Fontainebleau, when many of the most remote auxiliaries and tributaries of the Russian empire, the Bashkirs, the Usbecks, and some of the subjugated Circassian tribes, rode through the streets and boulevards of the French metropolis, sheathed in suits of chain mail, with bowcases beside their scimitars on their thighs, and quivers on their shoulders. As instruments of war and the chase, the bow is now confined to the most savage and uncivilized tribes, and but one people has ever been discovered so barbarously ignorant as not to have attained sufficient inventive genius to devise, or skill to use, the bow and arrow; those are the natives of Australia, undoubtedly the lowest created beings that wear the form of humanity, and claim the name of man. The disuse of the bow by the Esquimaux is not the consequence of ignorance, but of the want of materials, no wood being attainable by them from which a bow could be constructed. Many of the North American Indians, in past times, were exceedingly expert with the bow; but they early adopted the musket or the rifle, and, at the present day, except among the most remote frontier tribes, the bow is never seen unless it be among the children, or as an implement for catching fish. The Camanches, however, are an exception, for to this day, like the Parthians of old, their force consists in the perfection of their unrivalled horsemanship and of their unerring archery. Their bows are short, and their arrows clumsily pointed, but they are feathered on the true principle, exactly as was the old English cloth-yard arrow; and the warriors discharge them with such tremendous force that they have been known to pass entirely through the body of a bison, and fall, crimsoned with blood, on the further side. Such weapons are not harmless even against the arms and discipline of the whites, and many a gallant American has fallen by the unerring shafts of these fierce and indomitable savages, the last men, probably, on earth who will be famous as an archer nation.

ARCHES, COURT OF, a court of ecclesiastical law in England. Properly the arches court has a very limited jurisdiction over part of the city of London, but as the dean of arches is usually the deputy of the archbishop of Canterbury, nominally the supreme ecclesiastical judge of England, the arches court has come to be the chief court of appeal in the province of Canterbury, which includes nearly the whole of England. An appeal lies from the court of arches to the king in council, *i. e.*, to the judicial committee of the privy council. The dean of arches is *ex officio* president of the college of advocates of civil law, and as the admiralty law is founded on the civil law and *jus*

gentium, it is usual to constitute the dean of arches the principal judge in admiralty.

ARCHIAC, ETIENNE JULES ADOLPHE DESMIRE DE St. SIMON, vicomte d', author and geologist, born at Rheims, Sept. 24, 1802. He graduated from the military school of St. Cyr, as an officer of cavalry, in 1821, but quitted the service after the revolution of 1830. He had previously shown a taste for literature, and had published a romance entitled "Zizim; or, the Chivalry of Rhodes," but he henceforth devoted himself exclusively to scientific pursuits, and particularly to geology. His contributions to this department of knowledge have been many and valuable. The most important work that he has undertaken is the "History of the Progress of Geology from 1834 to 1851," which is published under the auspices of the French government. It is to consist of 8 volumes, of which 4 only have been completed.

ARCHIAS, A. LICINIUS, a Greek poet, born at Antioch toward the close of the 2d century B. C., and of whom we should know almost nothing were it not for the extant oration of Cicero in his defence. When a young man he went to Rome, and was treated with much attention by the leading men of the republic. He became particularly intimate with the Licinian family whose name he assumed as a token of respect. He attended Lucullus to Sicily, and afterward to Heraclea in Lucania, whither his patron was banished for his conduct in the Servile war. He was with Lucullus in Asia during the 1st and 8d Mithridatic wars, and in the interim he accompanied him into Africa. He at length returned to Rome, but no sooner did he do so than an accusation was brought against him for having assumed, without just title, the privileges of a Roman citizen. The case was tried before Q. Cicero, who was then prætor, and his relative, Marcus Tullius, undertook the defence. The result is unknown. Cicero and Quintilian assert that the poems of Archias were equally remarkable for beauty of style and variety of thought.

ARCHIATOR (Gr. *αρχιατρος*, chief physician), a title which seems in the first place to have been purely honorary and not official. In the times of the Roman emperors, the state of medical science was very low among the Romans. Greek physicians were therefore encouraged by the emperors to come to Rome. To remove as much as possible the prejudice naturally excited against them by national pride, Julius Cæsar bestowed on them the rights of citizenship. Augustus was taken with violent arthritic pains, and was successfully treated by Antonius Musa with cold affusions. In gratitude for his recovery, Augustus knighted his medical attendant, and exempted all the physicians of the empire from taxes and public burdens. Nero first gave the title archiator to his physician, Andromachus the elder. What was intended only as a personal compliment to Andromachus, coming from so august a source, passed rapidly into an institution, and archiator

became the designation of a class, a rank with degrees. The archiatri were divided into two classes, the city archiatri and the court archiatri, whose spheres of action and privilege are sufficiently indicated by the terms themselves. Later it came to be a civil requirement (Ant. Pius) that small cities should have 5 archiatri, larger ones 7, and the largest 10. The archiatri were salaried officers, and were expected to treat the poor gratuitously. As perquisites, they charged the rich for practice, and also had certain stipends called *annonaria commoda*. It was also considered a part of their duty to teach medical science to as many pupils as chose to avail themselves of their instructions, and to exercise a general supervision over the health of their medical dioceses, and the practice of the inferior physicians. We see here the germ of medical colleges and boards of health. In Sweden and Denmark the order still exists. In Sweden, however, only the court class of the archiatri is recognized. The archiatri were usually elected by the suffrages of physicians.

ARCHIDAMUS, the name of several kings of Sparta. I. The son of Anaxidamus, who lived during the Tegeatan war, which broke out soon after the termination of the second Messenian war, in the year 668 B. C. II. The son of Zeuxidamus, and succeeded to the throne in the year 469 B. C. In the 5th year of his reign there was an earthquake in Laconia which almost destroyed Sparta. In that trying period the foresight of Archidamus probably saved the surviving citizens from being massacred by the Helots. Apprehending danger from their scattered and defenceless condition, he caused an alarm to be sounded, which speedily collected such a body of them round him as was sufficient to deter their enemies from attacking them. In the wars against the revolted Messenians it was Archidamus who commanded the armies of Sparta. In the discussions at Sparta and Corinth, which preceded the rupture with Athens, he acted a prominent part, and always as the advocate of peace and moderation. He survived the outbreak of the Peloponnesian war about 5 years, during which time he had the conduct of three expeditions against Attica and one against Plataea. Archidamus died in the 42d year of his reign, 427 B. C. He was a wise and excellent man, the friend at once of his country and of Greece. Archidamus left two sons, named Agis and Agesilaus, and one daughter, named Cynisea, who is said to have been the only woman that ever won a victory in the hippodrome at Olympia. III. Son of Agesilaus II. While yet a boy he prevailed on his father to pardon Sphodrias, who had dared to make an irruption into Attica at a time of profound peace. In 371 B. C. he was sent to the relief of his countrymen who had been vanquished at Leuctra. In 367 B. C. he defeated the Arcadians and Argives in what the Spartans termed the "scarless battle," because they had won it without the loss of a

single man. In 362 B. C. he was intrusted with the defence of Sparta while Agesilaus was absent at Mantinea, and repelled the attack of Epaminondas on the city. In 361 B. C., on the death of his father, he succeeded to the throne. In 356 B. C. he supplied the Phocians with money to enable them to set at defiance the Amphictyonic decree, and to seize the temple at Delphi. Toward the close of the sacred war he entered Phocis with a considerable force to aid its people against the Macedonians and their allies, but on the approach of Philip Archidamus retired and left the Phocians to their fate. In 338 B. C. he went to Italy to succor the Tarentines, and was slain there in battle on the very day in which the Athenians and Thebans were overthrown at Chæronea. Archidamus III. appears to have been a warlike prince, but he was neither a great general nor a great statesman, and makes only a poor figure in either capacity after such kings as his father and grandfather. IV. Son of Eudamidas I. and grandson of Archidamus III., was king of Sparta in 296 B. C. In that year he was vanquished in battle by Demetrius Poliorcetes. V. Son of Eudamidas II. After the assassination of his brother, Agis IV., he fled from Sparta, but subsequently returned and possessed himself of the throne. He had hardly ascended it, however, when he was slain by the murderers of his brother, who feared his vengeance if his power should become confirmed. Archidamus V. was the last king of the Eurypontid race that reigned in Sparta. When he was killed the rights of his children were disregarded and his crown was given to a stranger.

ARCHIGENES, a Greek physician, whom Juvenal has immortalized. He was a native of Syria, and a pupil of Agathias, whose life he is said to have once saved. He practised at Rome in the reign of Trajan.

ARCHIL, a deep reddish purple dye, prepared from the lichen *rocellus*, which grows on the rocks near the sea in the Canary and other islands in the Atlantic and Mediterranean, and a second variety of it from the *parellus* of the basaltic rocks of Auvergne in central France. It is a thick, liquid preparation of ammoniacal odor, and is obtained by macerating the lichens in a covered wooden vessel with some ammoniacal liquor. It affords many fine shades of red, but they lack permanence. It is particularly useful for modifying, heightening, and giving lustre to the other colors. The solution in alcohol is the colored liquid employed in spirit of wine thermometers.

ARCHILOCHUS, a Greek poet, classed by Cicero with Homer and Sophocles, born in the island of Paros, flourished between 720 and 660 B. C. While a resident of Thasos, he incurred disgrace by throwing away his shield in a battle. He was the inventor of iambics. His terrible invective is said to have caused several suicides. A hymn to Hercules was the most esteemed of his poems, and used to be sung three times in honor of the victors at the

Olympic games. The gross immorality of his works has caused most of them to be forgotten, in spite of their poetic merits.

ARCHIMAGUS, the chief of the Persian Magi, or fire-worshippers. From the time of Darius I. the office appertained to the Persian throne. A conspiracy had been raised among the Magi, to restore the Median power in the Medo-Persian empire, by representing one of their number to be Smerdis, whom Darius had previously slain in order to come to the throne. Darius caused the pretended Smerdis also to be put to death, and after a general slaughter of the Magi, ordered it to be engraven on his monument, after his death, that he was master of the Magi. He probably meant by the inscription only to commemorate his triumph over the Median conspiracy, but from that time the Medo-Persian king was designated Archimagus.

ARCHIMANDRITE, a superior, or general abbot in the Greek church, having under his superintendence several abbeys and monasteries. It is derived from the word *mandra*, signifying a monastery. In the old Greek church the archimandrite is subordinate to the bishop of the diocese, having, however, some episcopal functions in the ceremonial of worship. Thus, officiating at the mass, the archimandrite gives the blessing of fire—symbolizing faith and spirit, with a candelabrum in each hand, one with 8, the other with 2 branches—a privilege reserved to the higher members of the hierarchy. In Sicily, even at the present day, some abbots of monasteries of the order of St. Basil, founded by the Greek church, are called archimandrites. Abbots of monasteries of the United Greeks, that is, of that branch of the eastern church which recognizes the supremacy of the pope, are also called archimandrites. This branch of the church exists in Poland, Galicia, Hungary, Transylvania, and the Slavic countries around the Adriatic gulf, and in Venice.

ARCHIMEDEAN SCREW, an apparatus for raising water to a very limited height. It is formed of a centre-shaft, on which metal plates are fixed, like the thread of a screw; the whole is placed in an inclined cylindrical trough, the lower end of which is in the water to be raised, the other end overtopping a partition on the other side of which it is to be discharged. The screw fitting in the trough, is made to turn in the proper direction, and the water is screwed up, as a solid ball would be. Such machines are of necessity imperfect, and are to be used solely where power costs nothing, or unskilled labor has to be depended upon.

ARCHIMEDES, the most celebrated among the mathematicians and mechanicians of antiquity, born at Syracuse, Sicily, about 287 B. C. He is said, in early life, to have visited Egypt, and to have conferred upon that country several useful hydraulic machines. Several of the ancient historians speak of his wide-spread fame as an astronomer and a mechanician. Vitruvius tells us that King Hiero, suspecting that a

golden crown had been fraudulently alloyed with silver, asked his friend Archimedes to discover if it were so. Going one day into the bath-tub, it chanced to be full of water, and he instantly saw that as much water must run over the edge of the tub, as was equal to the bulk of his body. Perceiving that this gave him a mode of accurately determining the bulk and specific gravity of the crown, he leaped out of the bath and ran home, crying, "*Eureka, Eureka*, I have found it, I have found it;" and thus indissolubly associated his exclamation with the joy of discovering truth. In his old age he defended his native Syracuse against the Romans under Marcellus, with great mechanical skill, and later historians say that he burned the Roman ships by concentrating upon them the sun's rays from numerous mirrors. The accounts of his defence of Syracuse wear a fabulous air, and yet there is not one of his feats which is not within the limits of possibility. But his purely mathematical works, still extant, demonstrate him to have far excelled all those who had preceded him, and some of his papers are worthy of his successor, Apollonius. The most celebrated are those on the ratio of the sphere and cylinder, on the ratio of the circumference to a diameter, on spiral lines, and on the parabola. He requested a cylinder and sphere to be placed upon his tomb-stone, and when Marcellus had stormed Syracuse, and Archimedes had been killed by a Roman soldier, the Roman general conferred upon him an honorable burial, and caused the tomb-stone to be inscribed as he had desired. Cicero, 140 years afterward, being appointed questor over Sicily, sought and found the tomb of Archimedes, overgrown with weeds and thorns. Syracuse was taken 212 B. C.

ARCHINUS, an Athenian statesman and patriot, who aided Thrasybulus and Anytus in expelling the 30 tyrants from Athens, 408 B. C. It was he who recommended that the Cadmean or Ionic alphabet should be introduced in all public documents. From an ambiguous allusion in Plato, some writers have been erroneously led to attribute a funeral oration to Archinus.

ARCHIPELAGO, originally a specific name applied to the *Ægean* sea, but now a generic term, designating any body of water containing a great number of islands. I. The original archipelago (the *Ægean*) is an arm of the Mediterranean sea, extending northward from the main coast line about 450 miles, with an average breadth of 200 miles. Its geographical position is between lat. 36° and 41° N. and long. 29° and 28° E. Turkey in Europe borders upon its northern and north-western coasts, Asia Minor upon its eastern, and the peninsula of Morea upon its western, while its southern limit is marked by an east and west tangent, to the southern shores of Candia, or Crete. Within these limits the *Ægean* forms an extremely irregular outline, having numerous armlets and indentations, among which may be mentioned

the gulfs of Argolis, Ægina, Volo, and Salonica, and Capes Malea, Colonna, Drepano, Santo, and Helles. It is studded with a vast number of islands, ranging in size from mere rocky islets to areas of 4,500 square miles (Candia), and mostly composed of calcareous masses, forming high bluffs, or mountain clusters, rising so abruptly from the sea that an average distance of one mile from their shores gives a sounding of 200 fathoms. Many of the mountains rise to a height of 2,000 feet, while Mt. Elias, on Negropont, or Eubœa, exceeds 4,000 feet. On the summit of this mountain are the remains of an ancient temple of Neptune. The Ægean islands are generally divided into two groups, viz., the Cyclades, lying mainly along the European coast, and the Sporades, which border the Asiatic side. Most of the Cyclades belong to the Greek kingdom, while Turkey claims the Sporades. Many of the islands are picturesque in scenery, and all the arable portions are extremely fertile. The principal productions are silk, cotton, honey, wines, figs, raisins, oranges, and other tropical fruits. Coral and sponges are found among the Sporades, while the Cyclades furnish the pure white marble known as the Parian, from Paros, one of the group, where it was first worked. Here, also, were found (1627) the Arundel marbles, or Parian chronicle, so replete with historical interest. A peculiarity of the tidal wave is known to navigators in the channel of Negropont (anciently Euripus). The tide frequently runs in this channel, in a given direction, at the rate of 6 to 8 miles an hour, and then suddenly, without any known cause, sets in the opposite direction, at nearly the same rate. The climate of the islands is salubrious, the inhabitants hardy, and the women noted for beauty. Bordering upon the ancient kingdom of Greece on the west, and upon the seat of "the 7 churches which were in Asia" on the east, the localities of the Ægean throng with associations, classic and sacred. II. The second in importance is the Indian Archipelago, which includes that extensive insular region of the eastern hemisphere, extending from the south-eastern coast of Asia to Australia, embracing the Philippine group, the peninsula of Malay, Sumatra, Java, Borneo, Celebes, and the Molucca and Banda isles, and stretching between the parallels of 10° S. and 20° N. lat. and 95° and 180° E. long. This immense area is bounded by the Chinese sea on the north, and by Australia on the south, and has the Pacific on the east, and the Indian ocean on the west. The climate is warm, the productions various, and important to the civilized world, and the commercial capabilities of the entire group unlimited, though as yet comparatively undeveloped. Throughout nearly all the islands of this archipelago are found gold, iron, coal, copper, tin, antimony, and diamonds, while from its soil are produced cotton, coffee, sugar, indigo, tobacco, and spices. The manufactures are also important. Geologically considered, the Indian Archipelago seems to consist of a

nearly semicircular volcanic chain, around Borneo as a sort of central mass. While Borneo is not distinguished for mountains, a very well-marked chain of elevation may be traced, commencing at the northern extremity of Sumatra, thence extending S. and E., through Java, Lombok, Sumbawa, Flores, and Timor, where, curving to the north, it strikes the western extremity of New Guinea, whence it assumes a mainly north-westerly direction through the Molucca and Philippine islands to its terminus at the head of the Chinese sea. This entire range is of recent volcanic formation, and many of its volcanoes are still active. Borneo is evidently the oldest in elevation, having no volcanic disturbances, and the extensive deltas at the mouths of its rivers, a feature mostly lacking to the axis of elevation above described, attests the position assigned it as the nucleus of a circular and progressive upheaval. The population of the archipelago consists of two distinct races, the Malay, and the negro, the latter of which are in the lowest possible state of civilization, and are rapidly thinning out before the former, or brown race.

ARCHITECTURE, the art of construction or building, may be divided into 3 distinct branches—civil, military, and naval. It can be ranked with the fine arts so long only as it is practised in accordance with the principles of harmony discovered in nature. The art of building had its origin in the desire implanted in man to procure protection from the outward elements. Each tribe or people constructed, from the materials that presented themselves, such habitations as were best suited to this purpose, and, at the same time, most convenient otherwise. We thus find in countries remote from other nations, and where foreign influences did not exist, an architecture at once singular, and as indigenous as the vegetation itself. The *hypogæa* of the borders of the Indus, the Nile, and the Ganges, the temporary tents of the nomadic tribes of eastern Asia, the oaks of the Grecian forests, fashioned by the ingenuity of man into the humble cabin (the prototype of the principal Grecian order), are indubitably the primitive styles of the Egyptian, the Grecian, and the oriental structures. Anterior to the discovery of printing, the monument was the tablet upon which the various races chronicled for posterity the annals of their history. In the simple, unhewn altar, we recognize the genius of religion; we trace in it the germ of the development of human intelligence; it bespeaks faith, ingenuity, ambition. The ancient Babel, and the altars of Scripture—the monuments of Gilgal and Gilead of the Hebrews—the Celtic Dolmens, the Cromlechs, the Peulvens or Menheirs, the Lichavens (the Trelithous of the Greeks), the Nurhaga, the Talayots, and the Tumuli (the Latin Mercuriales), are all symbols of pristine faith. With the pagan devotee, the art was made to conform to the moral attributes of the character of the deity in whose honor the monument was erected.

With the Greeks various styles of structure were thus instigated, from the early polygonal formations of the Phœnicians, at Astrea and Tyranthus, to the perfections of design, the imposing Doric, the graceful Ionic, and the magnificent Corinthian orders. Each nation, at every age, possessed its symbolic monuments revealing its conception of the attributes of the Infinite, with the exception of the Persians—who, as we learn from the Zend Avesta, worshipped in the open air, and who, according to Herodotus, possessed no temples, but revered the whole circuit of the heavens; and the Assyrians, whose Magi interpreted the silent stars, and worshipped the sun. Among such monuments, we must reckon as the chief the temple of Solomon, that sublime conception of the spirit of immateriality, true type, in its massive splendor, of a higher and purer belief; at Elora, the temple of Indra, sacred to Swargaa, the god of ether, which, according to the Puranas, was designed by Wisvakama, the *stapathi* or architect of the heavens. In China, the ancient Tings, Taas, and Mikosi, were temples of the gods, and the *mias* in Japan and Siam were sacred structures. The pyramids were symbolic emblems of the metempsychosian creed of Egypt. The Djebel Pharouni, the pyramids of Rhameses, the temples of Isis and Osiris, and the Memnon, bespeak, in their colossal size, a vast and boundless faith. Athens possessed her Parthenon, over whose magnificence presided Minerva Archegetea, and Rome her Pantheon, “shrine of all saints and altar of all gods.” Byzantium was adorned with the altar of a Christian emperor, her St. Sophia, the glory of the eastern church, with its dome, pendentives, and beautiful mosaic. The Casba of Mecca, sacred to the Arab faith, contains the revered stone, changed in its tears from its pristine whiteness to a blackened hue, in commemoration of mortal sin; and at which shrine the golden antelopes were consecrated. Ancient Cordova had her mosque, on which the Moors spent the riches of their oriental taste. There is Cologne with its cathedral, the *chef d'œuvre* of the mediæval age, the perfection of Gothic art, the revealed conception of a gigantic intelligence, destined by Frederic Barbarossa to be the sepulchre of the Magi who came from the east to adore the Saviour. Modern Rome possesses her basilica of St. Peters, on whose sublime structure, amid the visible decadence of classic art, Michel Angele lavished his genius.—Of the early achievements and of the progressive steps of the science of architecture, there remain but fragments, though sufficient, with the assistance of history, to teach us their antiquity. The epochs of advancement can be traced, progressively, from the early elements of structure to the more perfected styles. Throughout the whole globe, we find remains of edifices which proclaim an early possession of certain degrees of architectural knowledge. The most remarkable vestiges of these primitive structures, save the Celtic monuments, are those supposed to be the works of

the giants or Cyclops mentioned in the Odyssey. By whom they were erected, however, is unknown, though they have been attributed to the Pelasgians. The walls of their cities, of their sacred enclosures and tombs, were composed of blocks of stone of a polygonal form well adjusted. No cement was used, the interstices being filled with small stones. At times they present horizontal layers whose upright joints are variously inclined. Their entrance gates received different forms. The most common being quadrangular: composed of upright jambs, either perpendicular, or inclined, supporting a lintel. Others assume the shape of a pointed arch; the jambs gathering to a point at the summit. Examples also present themselves of truncated pointed archways over the lintel; an arch occasionally being constructed, discharging this member of the superincumbent weight. We are led to suppose that within their city walls, the habitations were erected without order, a place being reserved in the midst for public assemblies. Little is known of their domestic architecture, as there exist no vestiges of those palaces so highly spoken of by the ancient poets. Perhaps the most interesting of their structures are their circular subterranean chambers styled treasuries; they present vaulted ceilings, although not constructed on the principle of the arch—the vaulted form being obtained by horizontal annular layers, corbelling inward—the projecting edges of the stones being taken off after the construction was completed. According to Blouet they served for tombs as well as for treasuries. Internally, they were covered with sheets of bronze. At Mycene several examples are to be found.—The most ancient nation known to us who made any considerable progress in the arts of design, is the Babylonian. Their most celebrated monuments were the temple of Belus, the Kasr, and the hanging gardens which Nebuchadnezzar built for his Lydian bride, the wonderful canal of the Nahar Malca, and the lake of Palacopos. From the dimensions of their ruins can be formed an idea of the colossal size of the structures they composed. The material employed in cementing the burned, or sun-dried bricks,—and upon which hieroglyphics are to be traced, was the mortar produced by nature from the fountains of naphtha and bitumen at the river Is, near Babylon. No entire architectural monument has come down to us from the Assyrians, whose capital was embellished with the superb Kalla, Ninoah, and the Khorzabad; nor from the Phœnicians, whose cities, Tyre, Sidon, Arados, and Sarepta, were adorned with equal magnificence; nor from the Israelites, whose temples were wonderful structures; nor from the Syrians, the Philistines, and many other nations. Our want of thorough knowledge concerning the architecture of these oriental nations is attributable partly to the innumerable devastations which have taken place on this great battle-field of the world; but to the perishability of the materials that were employed,

such as **gypsum**, alabaster, wood, terra cotta, and brick, with which their ruins abound, we must likewise attribute, in part, this ignorance. From recent discoveries, we have been able to see the great affinity existing between many of the works of these nations and those of Egypt and Greece; in their sculptures and ornaments, for example, and in the coloring of the various parts of their structures—which were without doubt polychromatic. Of the very ancient Chinese monuments we have no trace, they having been destroyed by Tsin-Chi-Hoang-Ti upon his ascending the throne. Their pagodas are merely imitations of the design of the nomadic tent; while the renowned Chinese wall is among the most wonderful structures of the whole world. We find that suspension bridges existed in China at a period when they were unknown to other nations. Japan, Siam, and the islands of the Indian ocean, abound in ancient ruins once sacred to the divinities of the Buddhist faith. The massive temples of the Hindoos at Ellora, Salsitta, and the island of Elephanta, seem in their awful grandeur like the habitations of giants, on whose land some divine malediction has fallen. The Hindoos, in these colossal structures with their endless sculptured panels, their huge figures, and their astounding and intricate excavations, evince a perseverance and industry equalled only by the Egyptians. Their pagodas, towering in the air, are likewise wonderful architectural achievements quite as admirable as their hypogea. The Indian structures are remarkable for their severe and grotesque appearance. Their temples—whether of Brama, the creator of all, Vishnu, the preserver of all, or of Seeb or Sheva, the destroyer of all—exhibit a striking embodiment of the attributes of the deities in whose honor they were erected. A remarkable resemblance to the Hindoo constructions has been found in the religious monuments or *teocallis* of Mexico and Yucatan.—**EGYPTIAN ARCHITECTURE.** But the architectural types of these antique structures, sink into insignificance when compared with those of Egypt. The obelisks, pyramids, temples, palaces, tombs, and other structures with which that country abounds, are on a colossal scale, and such as can have been executed only by a people far advanced in architectural art, and profoundly versed in the science of mechanics. These works, like the Hindoo structures, were remarkable for their gigantic proportions and massiveness. Intricate and highly painted rilievo sculptures or hieroglyphics covered the entire extent of their walls. The prevailing monotony of the hieroglyphic designs which form the chief feature of Egyptian architectural decoration, was superinduced by the circumscribed and limiting laws of their religion. In Egyptian architecture we trace the elements of the early Indian school, blended with more harmonious combinations, as likewise the introduction of architectural orders. Beside skilled organization of parts, and a just appreciation of pleasing effect, their works in

their colossal features evince a thorough knowledge of the geometrical branch of the science of construction. The architectural genius of Egypt lavished its power on mausoleums, and on gorgeous temples to the deities, which, in their sublimity, inspire awe. The earliest works of the Egyptians are their hypogea or spea wherein their dead were interred, and which served also as subterranean temples. In these excavations, or caves in the flanks of mountains, square piers were reserved in order to support the superincumbent weight. They were covered internally with hieroglyphics and bas-reliefs, enriched with color. Subsequently, temples were constructed in the open air. At Amada exists, perhaps, the most ancient example of these temples. It is peculiarly interesting to archaeologists, as it forms the connecting link between the superb edifices of the Pharaohs and their prototypes, the spea. It also furnishes us with the proto-Doric order, combining square pillars with cylindrical columns. The plan of the temples constructed by the Egyptians is very similar to that of their hypogea. They were generally approached by an avenue, on either side of which was a row of sphinxes, leading to the propylon, before which stood the obelisks, thus forming an entrance into an open quadrilateral court surrounded by porticos. Opposite this entrance was another leading into a spacious hall, whose ceiling was supported by columns. In the rear of this principal hall were one or more smaller ones. The walls, ceilings, and columns were decorated with figures in bas-relief and hieroglyphics richly colored. The colors most generally employed were yellow, green, red, and blue. Their palaces were constructed upon a plan very similar to that of their temples. We know little concerning the habitations of the great mass of the nation. According to some, houses were constructed in stories, whilst others assume that their temporary abodes were mere huts. This people lavished their wealth upon their tombs, and devoted their lives to the construction of their eternal homes. Beside their wonderful cities of the dead, hewn in rocks, or embedded in hills, the Egyptians reared their stupendous pyramids, the most gigantic monuments existing. In plan, they are perfectly square, their corners being directed toward the cardinal points, and their sides presenting nearly equilateral triangles. From the immensity of these constructions, some have suggested the probability of the existence of a natural rock or hill within. Whether or not the outer surface was smooth or graduated with steps, when finished, it is impossible for us to decide. The constructions of the Egyptians are in granite, breccia, sandstone, and brick, which different materials are adjusted with much precision. The huge blocks employed in their various monuments exhibit a perfect acquaintance with the laws of mechanics. We cannot but wonder at their monolithic obelisks, especially when we reflect upon the immense distances they had to

be transported. The pyramidal shape pervades most of their works; the walls of their temples inclining inward. The jambs to their entrance gates also were generally inclined. The Egyptians never used columns peripterally even under the dominion of the Greeks and Romans; when the column was used externally, the space intervening was walled up to a certain height. To these circumstances, together with the fact that their monuments were terraced, can be ascribed their massive and solid appearance. With them, columns were employed to form porticoes in their interior courts, and also to support the ceilings. The shafts, of different forms, being conical, or cylindrical, or bulging out at the base, sometimes presented a smooth surface; they were rarely fluted, being generally covered with hieroglyphics. Occasionally, they were monoliths, but were generally constructed in layers, and covered with hieroglyphics; a circular plinth formed the base. The capitals resemble the lotus, at times, spreading out at the top; again, the flower appears bound together, assuming the bulbous shape; above is a square tablet forming the abacus. Others, of a later date, present projecting convex lobes; whilst other capitals are composed of a rectangular block with a head carved on either side, surmounted by a die also carved. Caryatic figures were also employed by the Egyptians, and were generally placed against walls or pillars, thus appearing to support the entablature, composed of a simple architrave and a coved cornice, with a large torus intervening, which descends the angles of the walls.—**GRECIAN ARCHITECTURE.** The Pelasgians appear to have been the first people settled in Greece, numerous remains of whose structures are still extant. Subsequently, from the knowledge possessed by the indigenous tribes, together with that acquired from the Egyptians and the Asiatic nations, the Greeks extracted and developed a style peculiarly their own; and architectural art passed from the gigantic to the elegant and classic forms. During the reign of Pericles it flourished with meridian splendor, and some of the most superb edifices the world has ever seen, were erected during this period. The Grecian monument belonged to the nation, and upon the public works of the country the government lavished fabulous sums. Heeren informs us, that the Greeks placed the necessary appropriation of funds for the public works at the head of the government expenditures. The thoughts of the whole Grecian nation, it would seem, were turned toward the adornment of the country. They forbade by law any architectural display on private residences, and in fact, until after Greece became subject to Macedonia, architects were permitted to work only for the governments. The Greeks loved recreation, and the government, as a political necessity, provided the populace with amusements. Hence the Grecian cities were adorned with temples, theatres, odeons, gymnasiums, choragic monuments, and the like.—The Gre-

cian temple consisted of a pronaos or vestibule, and a naos or cella. These sometimes were accompanied by an opisthodomus, supposed to be the treasury, together with a rear portico, or posticum. According to the disposition of the columnar decoration, they were styled in antis, prostyle, amphiprostyle, peripteral, dipteral, pseudo-peripteral, or pseudodipteral. The principal front of those in antis presents columns in the middle, with antæ on either side, supporting the pediment; in the prostyle, the antæ are replaced by columns; the amphiprostyle presents a similar disposition in the rear as well as the front; the peripteral presents columns forming a portico around the cella; when the lateral columns were engaged, instead of isolated, the temple was styled pseudo-peripteral; the dipteral offered a double colonnade around the cella; in the pseudodipteral, one of the ranks of columns was engaged in the wall. They are termed tetrastyle, hexastyle, octastyle, according to the number of columns supporting the pediment.—Their temples were generally cleisthral, or covered; those erected in honor of superior deities were hypethral, or open to the skies. In these latter, the cella was divided longitudinally into 8 naves by a double row of columns, which supported the roof covering the side aisles. In order to save room, these rows of columns were in 2 stories, as thereby they were enabled to attain the desired height with columns of a less diameter. The ceilings of the porticoes were subdivided in caissons, oftentimes highly colored, as were likewise many parts of their edifices. The frieze below the ceiling, on the exterior of the cella walls, was often ornamented with bas-reliefs. The walls, internally, were decorated with paintings, though it is supposed that generally these latter were not executed directly on the walls, but were suspended against them. The pavement of the cella was usually elevated above that of the portico. That of the Parthenon, however, is level throughout. Opposite the entrance-door was placed the statue of the deity of the temple, which was often of colossal size; whilst others were arranged on either side of the cella, or about the principal deity. They were generally in marble or bronze; sometimes, however, they were of ivory and gold. Beside the different statues of their divinities, the cella contained altars, tripods, thrones, arms, vases, and utensils of different sorts; all of which objects were generally in precious materials, highly wrought.—Their more important temples were built on sacred ground; within the peribolus or enclosure were sacred groves, grottos, altars, columns, statues, &c. The entrance-way or propyleum, somewhat similar in plan to the pronaos of their temples, was grand and imposing. Little is known of their theatres and odeons; the graded hemicycles of the former, destined for the spectators, being all that now remain of them. These hemicycles were excavated in the side of

a hill. Of the choragic monuments, that of Lysicrates at Athens is the finest example; upon a quadrangular basement, was placed a cylindrical monument with engaged Corinthian columns supporting an entablature surmounted by a dome crowned with a beautiful acroteral motive, upon which was supposed to have been placed a tripod.—Their agoras, or public places of assembly, were surrounded by porticos decorated with paintings, commemorative of glorious achievements. Within the enclosure were temples, altars, and statues dedicated to their heroes. We know little of the architectural arrangement of their gymnasiums, which contained the halls, porticos, and exedres, where the sages taught their different philosophies; their baths, accompanied by their dependencies, about which were disposed the stadium, and courts for various gymnastic exercises. It is likewise difficult to obtain any accurate idea of the architectural disposition of their domestic habitations, as no examples remain. The beauty and grace which pervade all of their works, whether monumental, mechanical, or industrial, lead us to suppose that, although imperfect as regards comfort, they must yet have exhibited a certain degree of elegance. A just idea of the mouldings and ornaments, unequalled for their purity and grace, can be obtained only from personal observation. It is also impossible, from any verbal description, to be able fully to appreciate the beauty and harmony of their different styles. It may be well, however, here to lay down some general principles.—These styles may be classed in systems or orders: the Doric, Ionic, and Corinthian. They also employed, though rarely, caryatides. Innumerable conjectures exist concerning the origin of these different orders. In all probability we are indebted to the Dorians for the invention of the Doric; although Champollion sees in an Egyptian order, which he styles the proto-Doric, the type of the Grecian order of that name. The oldest example extant is at Corinth.—To the Ionians, likewise, is attributed the honor of having first employed the Ionic order, no example of which is to be found in Greece, prior to the Macedonian conquest. As for the origin of the Corinthian, without wishing to discredit the interesting narrative of Vitruvius, wherein he accords to Callimachus the invention of the Corinthian capital, it might be well to state, that foliated capitals of much greater antiquity than any discovered in Greece, are to be found in Egypt and in Asia Minor. The most perfect Grecian example of this order is employed in the choragic monument of Lysicrates.—Little doubt need be entertained as to the Greeks deriving the idea of their caryatid order from the Egyptians, who often employed human figures instead of columns in their structures.—The Doric holds the foremost rank among the Grecian orders, not only on account of its being the most ancient, the most generally employed, and consequently the most perfected; but more especially because of

its containing, as it were, the principle of all their architecture, as well as an exact imitation of all the parts employed in their primitive constructions, which were undoubtedly of wood. Thus we see the post represented by the column, the wall-plate by the architrave, the extremities of the joists by the triglyphs; the rafters naturally produce the projection which composes the cornice; while the double pitch of the roof gives us necessarily the form of the pediment.—This style, typical of majesty and imposing grandeur, was almost universally employed by the Greeks in the construction of their temples; and certainly monumental art does not furnish us with the equal of a Greek peripteral temple.—The Grecian Doric may be divided into 8 parts: the stylobate, the column, and the entablature. The stylobate is formed by 3 receding courses, together about equal in height to the inferior diameter of the column, which dimension is generally used as a measure of proportion in describing the orders. On the uppermost course stands the column, from 4 to 6 diameters in height, and whose diameter at top is about three-fourths of that at base; the shaft thus assuming a conical shape (which diminution, in a slightly curved line, is styled *entasis*), generally bears 20 shallow flutes, their sections forming segments of circles, or similar curves which meet and form a sharp anis. At the base these flutes detail on the pavement; they pass through the hypotrachelium, and terminate beneath the anulets of the capital, either in a straight or curved line. Upon the shaft is placed the capital, nearly one-half of a diameter in height, composed of an abacus, or square tablet, about $1\frac{1}{2}$ diameter in width, and one-fifth in height. This member is supported by the echinus, of about the same height when there is a necking, but occupying a greater proportion when none exists. This echinus or ovolo bears 3, 4, or 5 rings at the bottom, where it dies away in the shaft.—The axes of the columns were slightly inclined. According to Villerot, in a rectangular temple, planes passing through the centres of the columns would meet in a straight line; in a point, if the plan of the temple were square; the columns at the angles following in both cases the direction of diagonal lines. This inclination does not commence until the second course, or about one-tenth of the height of the column, if monolithic. The first course being an oblique truncated cone, determines the angle of inclination; the remaining courses forming the column are upright truncated cones, perfectly adjusted one to the other. The inclination of each column is proportional to the distance, to the line joining the foci, if the monument be rectangular, or to the centre of the plan of the edifice, if square. Thus the columns at the angles are the most inclined, those in the middle of the sides the least.—The entablature, about 2 diameters in height, is subdivided into 3 parts: the architrave, the frieze, and the cornice. The architrave occupies about two-fifths of the whole

height, being perfectly simple, crowned by the *tænia* or continuous fillet, one-tenth or one-twelfth of its entire height; below this fillet, under the triglyphs, is a *regula*, of the same height, from which depend 6 cylindrical drops. The face of the architrave is generally in a vertical plane tangent to the base of the columns. The frieze, of about the same height as the architrave, is terminated on top by a projecting fascia, occupying about one-seventh part of its whole height, which breaks around the triglyphs, where it is slightly increased in depth. Horizontally, the frieze is subdivided into triglyphs and metopes, which regulate the intercolumniation in the following manner: A triglyph about one-half a diameter in width, is placed exactly over the middle of each column, and one in the intervening space. They are separated by the metopes, which in width are equal to the entire height of the frieze. This distribution differs, however, at the angles; here the outer edge of the triglyph is in the same perpendicular line with the circumference of the base. Thus the first intercolumniation, counting from the angles, is contracted. The Greeks also gave a greater diameter to the columns at the angles. The triglyph is subdivided into 2 glyphs, each one-fifth of the whole width (a triangular fluting or channel formed by the intersection of 2 vertical planes inclined inward from the face of the tablet) of 2 semiglyphs, and 2 interglyphs, each one-seventh of the entire width. The glyphs detail on *tænia*. Above they are sometimes square-headed, sometimes curved; the semiglyphs finish with a curve at the top. The surface of the interglyphs is in the same plane with the architrave. The metopes recede from the triglyphs, and were oftentimes decorated with sculpture.—The cornice, projecting about its own height, is composed of a corona, about one-half of the whole height, crowned by a square fillet supported by a congeries of mouldings, together about one-half of the height of the corona, which latter has on the lower edge a sunken face bearing the mutules and guttæ, which form the soffit or planceer of the cornice, inclined up inward at an angle of about 80°. The mutules are placed directly over the triglyphs and metopes, and are exactly equal to the former in width. They are ornamented with 8 rows of cylindrical drops. The height of the pediment is generally about 1½ diameter. The cornice-crowning inclined sides of the tympanum, differs from the horizontal one at its base, inasmuch as the mutules are left out, and another member superimposed, which is either an ovolo with a fillet, or a cymatium, occupying a space equal to about one-half the depth of the cornice with its mutules. The tympanum was often decorated with sculpture. The flank cornice supported antifixæ, an ornament used to cover the ends of the joint tiles of the roof. The *antæ* or pilasters, nearly equal in diameter to the columns, did not diminish at the top, nor were they fluted like the columns; they generally had a conge-

ries of mouldings at the top and the bottom. The Greeks never employed peripterally any other than the Doric order.—The Ionic, remarkable for its grace and suavity of proportions, holds a *juste milieu* between the simple Doric and the rich Corinthian order. According to some, it was originally employed in funereal edifices. At Telemissus, in Lydia, are to be found tombs cut in the rock, which invariably offer examples of this style; moreover, on the Grecian vases the representation of the Ionic column is symbolical of a sepulchral monument. This order, as well as the Corinthian, is more tractable than the Doric. Like the latter, it is composed of stylobate, column, and entablature. The column has a base as well as a capital, and is about 9 diameters in height. The base, about one-half a diameter in height and 1½ in width, is composed of a torus resting on the stylobate, a scotia and a second torus, all about equal, and separated from each other by a fillet, one also finishing the apophyge, or escape of the shaft, which diminishes with entasis about one-sixth of a diameter, bearing 24 flutes deeper than in the Doric column, and which are separated from each other by fillets. These flutes finish in same curve above and below. The capital is about one-half of a diameter in height, when unaccompanied by a necking; when one exists, it is about three-quarters high. The volutes carved on faces of a parallelogramic block, and connected at sides by bolsters, and in front by flowing lines, are supported by a congeries of mouldings, composed of a bead and ovolo. Superimposed is an abacus. These volutes are a full half diameter in depth, and extend in width about one diameter and a half. When this capital is accompanied by a necking a torus is introduced in corbel mouldings, supporting the volutes, and the necking itself, ornamented with the honeysuckle and tendrils, is separated from the shaft by a fillet, or a bead. The outer volute of capital at the corners is inclined at an angle of 45°, so as to present a volute when viewed from either side; internally the two volutes meet at right angles.—The entablature, a little over two diameters in height, is composed of architrave, frieze, and cornice. The former occupying about two-fifths of whole height, contains three equal fascias, slightly projecting one beyond the other, the lowest one being in a plane tangent to the inferior circumference of the column. On the upper edge of the architrave are a few corbelling mouldings comprising a little less than one-quarter of its whole height. The frieze is of the same height with the architrave, recedes slightly, and is either plain or ornamental with sculpture. The projection of the cornice is about equal to its height. It is composed of bed-mouldings undercutting the corona; this latter is of great breadth, and the crown mouldings are of much less importance than in the Doric. The pediment of this order is also rather lower, and its cornice is crowned by a rectangular fillet

surmounting small mouldings. The intercolumniations differ from 2 to 3 diameters. —The only example of the Grecian Corinthian is to be found in the choragic monument of Lysicrates, which is a small circular structure decorated with engaged Corinthian columns, placed upon a high rectangular basement. This order is composed of a stylobate, a column, and entablature; the former occupying in height a little more than one diameter. The column is about 10 diameters high, has a base somewhat similar to the Ionic, between one-third and one-half of a diameter in height, and in width rather more than one diameter and one-half. The shaft, whose top diameter is about five-sixths of that at the base, bears 24 flutes nearly semicircular, terminating at the bottom in the same curve, and at the top in leaves, the fillets forming stalks. The capital separated from the shaft by a groove, is a little more than $1\frac{1}{2}$ diameter in height. Its cylindrical body is surrounded at the bottom by a row of water leaves occupying about one-sixth of the entire height. Above them exists a row of acanthus leaves twice as high as the former, seemingly buttoned on. Between this second row and the abacus are helices and tendrils, the latter supporting honeysuckles in the middle of the abacus, which member is about one-seventh of a diameter in height, and in plan presents a square with concave sides whose angles are cut off at 45° ; its section presenting a fillet, on which reposes a cavetto and an ovolo separated by another fillet. The entablature is about 2 diameters and one-quarter in height, of which the architrave and cornice occupy separately rather more than one-third, and the frieze rather less. The architrave is divided into 8 equal fascias, inclined inwardly sufficient to bring the outer edges in the same plane with the inferior diameter of the column; these fascias together are crowned by corbelling mouldings being one-sixth of the entire height. The frieze is slightly inclined also and is sculptured. The projection of the cornice is about equal to its height. The bed mouldings have about two-fifths of this projection, and occupy five-eighths of the entire height of the cornice, undercutting the planer. Their principal feature is a dentilled member, it being more than one-quarter of the whole cornice in height. The height of the corona is only three-eighths of the cornice, and nearly one-third of this is taken up by the crowning ovolo and fillet. In this example the cornice is surmounted by a cut fascia supporting antifixæ, somewhat similar to those employed on the flanks of Doric and Ionic temples. The intercolumniation is $2\frac{1}{2}$ diameters. —In the example offered us at the Acropolis of Athens the caryatides stand on a stereobatic dado, placed on the stylobate; the antæ bear the mouldings of the temple to which they are attached, forming base mouldings to dado which has also a cornice. The entire height of the stereobate is about three-fourths of that of the figures, taken together with their base and cap-

ital: the former is a square tablet or plinth, the latter a circular moulded block crowned by an abacus. The entablature is about two-fifths of the height of the figures, and is nearly equally divided between architrave and cornice. The upper of the 8 fascias of the architrave is ornamented with circular discs. The cornice is composed as usual of bed-mouldings, corona, and crown-mouldings, the former with dentilled member forming about two-fifths of the whole height. —ETRUSCAN ARCHITECTURE. The extreme obscurity of the Etruscan history has rendered it difficult for antiquarians to decide any thing positive in relation to the origin of that people. In addition to the indigenous Etruscans, we find an admixture or blending with the Pelasgic or Grecian colonists, who settled in Italy, according to Micali, during the century preceding the Trojan war. The polygonal formations observed in the walls of Etruria belong to the Pelasgic civilization, and are similar to those of Hellas and of Asia Minor. —The commercial relations existing between the Etruscans and the Hellenes of Asia Minor and Magna Græcia, account for the existing similitudes in their artistic productions. The ceilings of the hypogæa, hewn so as to represent caissons, tend to corroborate the idea that their earliest structures were of wood, which, with them as with the Greeks, became the archetype of their structures in stone. To the Etruscans the invention of the arch, constructed on its true principles, has been generally attributed, as likewise the composition of an order styled Tuscan, a species of simple Doric, no entire example of which, however, has been handed down to us by the ancients. —ROMAN ARCHITECTURE. The history of Roman architecture, under its kings and at the beginning of the republic, is somewhat obscure, as but few of the monuments of that period remain. The Roman kings fortified the city, and erected various palaces, temples, and tombs. It became adorned with colossal works of art, whose stupendous features forming such a contrast with the comparative insignificance of its power and condition would seem to indicate that the future of imperial Rome had been foreshadowed to its people. The early Romans employed Etruscans in their works. When Greece at length fell under the yoke of the Roman empire, Rome became enriched with the spoils of Athens. The Greek artists sought protection and patronage among their conquerors, and adorned the imperial capital with structures which called forth unbounded praise. The Grecian style was blended with the Etruscan during the more early period of the Roman school. But as the arch, which was the characteristic feature of Roman architecture, revealed its treasures, the Grecian elements were employed but as a system of ornamentation. Thus, oftentimes, the column no longer served as a support, but was merely used to decorate the pier or wall from which the arch sprang. Great discussions have arisen, and still arise, as to who were the inventors of the arch. In

Etruria are found many monuments wherein its design exists, and which are of an anterior date to the construction of the *cloaca maxima* (wherein it is fully developed), and even to the foundations of Rome. Whether the Romans have a just claim to the discovery of the arch, it is impossible to say positively; it is more than probable, however, that the arch originated with the Etruscans, but owed its useful application to the Romans. With its introduction came various important modifications in architecture. Arcades were substituted for lintels. With the assistance of the arch great spaces could be covered, and the various combinations of vaulted ceilings naturally ensued.—The early Roman structures were of stone. Subsequently the mass of the constructions was of brick, externally decorated with slabs of marble, and similarly decorated internally, together with stucco work. Bricks seem to have been used by the Romans, partly in consequence of the facility offered by this material for the construction of the arch, and partly because they had but little marble. It has been supposed that the necessary economy of the material used in building developed the mechanical powers of the Romans, and that by this taxation of their ingenuity they discovered the principles of the arch. No nation presents so great a variety in their constructions as the Roman. Stone, terra cotta, bricks, and marble, were ingeniously put together in various ways. They were especially renowned for their hydraulic works. The edifices of the Romans display a taste for the luxurious and the magnificent rather than for the harmonious and beautiful, which sentiments pervade the Grecian monuments. In their interiors especially are we struck with the gorgeousness of their decoration. Their exterior pavements were variously composed of stone, tiles, marble, porphyry, and other durable materials laid in cement. Internally their floors were similarly laid in mosaic work. This style of work is supposed to have originated among the eastern nations, subsequently being employed by the Egyptians, Greeks, and Romans. Their walls were stuccoed and decorated with paintings in the arabesque style, or covered with various marbles, alabaster, and jaspers, while their columns also were of granite, marble, and porphyry. This luxury strikes us the more forcibly, as these apartments so richly adorned and containing various *chef-d'œuvre* of art, were but very imperfectly lighted; in fact, they were sometimes wholly dependent upon lamps. This, too, is one of the glaring defects in their dwellings, as can be clearly seen at Pompeii. Their houses generally presented an entrance on the street, accompanied by shops, if in a principal thoroughfare, leading into an *atrium* or court, with compluvium in the middle and porticoes on the sides connecting with the rooms occupied by the servants. This court connected with another in the rear also surrounded by a portico, which led to the apartments of the master.

But nowhere is this taste for richness rather than simplicity more evident than in comparing the details and mouldings of these two people. It is due them, however, to make an exception in favor of their Corinthian order which they employed as universally as did the Greeks the Doric, and to their structures must we turn for many of the finest types of this order. The column varying in height from $9\frac{1}{2}$ to 10 diameters is composed of base, shaft, and capital. The base, about one-half of a diameter in height, in some cases consists of 2 tori and a scotia with intervening fillets, placed upon a plinth as in the examples of the temples of Antoninus and Faustina, of Vesta and of Assisese; whereas, in the temples of Jupiter Tonans, of Castor and Pollux, and in the portico of the Pantheon, there exists a double scotia. The shaft diminishes with entasis about $\frac{1}{4}$ of a diameter, and is generally fluted when the material permitted. These flutes were semicircular, separated by fillets, one-quarter of their width, and 24 in number. At the upper extremity, the fillet above the cavetto supports a small torus, on which rests the capital, about one diameter, and $\frac{1}{2}$ in height, composed of 2 rows of 8 acanthus or olive leaves. The lower row, about $\frac{1}{2}$ taller than the upper one, occupies about $\frac{1}{4}$ of the whole height of the capital. The leaves of both finish on the hypotrachelium. Above are helices and tendrils trained with foliage, surmounted by an abacus, composed of a cavetto, fillet, and ovolo forming together $\frac{1}{4}$ of the entire height, and which in plan presents a square with the corners cut off; the sides being concave segments of circles, in the middle of each of which is placed a flower or rosetta. The entablature is about $\frac{1}{2}$ of the column in height, $\frac{2}{3}$ of which being occupied by the architrave, together with the frieze. The former being divided into 3 unequal fascias, generally separated by a bead and a cyma-reversa, and crowned by a small congeries of mouldings, the first fascia impending the shaft at top. The frieze is generally enriched with sculpture. The bed mouldings of the cornice, when decorated with modillions, occupy about $\frac{2}{3}$ of the total height; when no modillions exist, only one-half is taken up by them. They generally consist of a bead, a cyma-reversa, and a fillet, a vertical member dentilled or not, another bead and an ovolo, supporting a plain vertical face, $\frac{1}{4}$ of bed mouldings in height, which bears the modillions, and which is surmounted by a cyma-reversa, which breaks around the same. The modillions are horizontal consoles, in width equal to their height, bearing large volutes at inner end and smaller ones at the outer extremity, joined by a graceful curve, underneath which spreads an acanthus leaf; the space between them is about twice the width of the modillion itself. Resting upon the modillions is the corona surmounted by a small congeries of mouldings, a cymatium, and a fillet. The planceer of the corona is offered between the modillions, in the centre of each is placed a rosette.—The com-

posite order may be considered as a sort of Corinthian, as the principal difference exists in the capital, where the volutes occupying about one quarter of the total height rest upon a bead and ovolo; the central tendrils are also omitted, and the upper row of leaves is higher than in the ordinary Corinthian. Beside this particular composite capital, the Roman monuments furnish us with others ornamented with trophies, eagles, masks, &c. The pediments of the Roman edifices were steeper than those of the Grecian. The cymatium of the same was continued along the flank cornices, thereby doing away with the *antefixa*. The Doric order, on account of its simplicity, was very rarely employed by the Romans. In the few examples which have been preserved, the proportions are more slender, the projections less hardy than in the Grecian Doric; and, in endeavoring to give it more elegance, this order lost with the Romans its simplicity and grandeur. At Albano an example has been discovered where most of the mouldings are ornamented. The baths of Diocletian furnish us with still another example greatly enriched. The necking is ornamented with small rosettes, the echinus is sculptured with leaves, the metopes and corona are also enriched with sculpture, while the cornice resembles that generally employed in the Ionic order. The best examples of this order, handed down to us by the Romans, decorate the temple of Hercules at Cora, and the theatre of Marcellus at Rome. In this latter example, the column composed of shaft and capital is about 8 diameters in height. The capital, occupying about one-half of a diameter in height, may be divided into 3 nearly equal parts. The uppermost given to the abacus of less projection than in the Grecian examples, is crowned by a *cyma-reversa* and fillet; the ovolo supporting the abacus is a semi-torus resting on 3 fillets, occupies the middle division, whilst the lower third is taken up by a necking which is separated from the shaft by a small torus and fillet. The shaft, less conoidal than in the Grecian examples, is without flutes, the superior diameter being about four-fifths of the diameter at the base. The total height of the entablature is about one-quarter of that of the column; its projection is about equal to its height. The architrave is one-half of a diameter in height; the frieze one diameter and one-half. The principal difference in the distribution of the Grecian and Roman Doric frieze is in the position of the triglyph over the column at the angle. The Romans preserved the same intercolumniation throughout, and placed the triglyph directly over them, thereby forming half metopes at the angles. In the cornice the bed-mouldings occupy more height than in the Grecian types, and are composed generally of a *cyma-reversa*, dentil, and ovolo, separated by fillets. The corona is of less importance, it being sacrificed to the cymatium, which in return is of more value than in the Grecian Doric. The planter generally bears *mutules*,

though sometimes these latter members are dispensed with. The only examples of the Ionic order in ancient Rome are to be found in the two temples near the theatre of Marcellus, in the temple of Manly Fortune, in the baths of Diocletian, in the Colosseum, and in the upper order of the theatre of Marcellus. The total height of the columns varies between 8 and 9 diameters. The base, about one-half of a diameter in height, is composed of a torus resting on a plinth, a scotia and a second torus; the three upper members have fillets intervening. The shaft slightly increased in diameter at one-third of its height, is either plain or fluted; in the latter case the flutes, separated by fillets, are semicircular, and are 20 in number. The diminution of the shaft varies between one-eighth and one-tenth of a diameter. The capitals, occupying about one-half of a diameter, vary; those of the theatre of Marcellus, and of the temple of Manly Fortune, are without a necking. The volutes connected by horizontal instead of curved lines are bolstered, and the abacus crowning the volutes is composed of a *cyma-reversa* and a fillet. In the Ionic capitals of St. Lawrence at Rome (generally thought, formerly, to have belonged to the temple of Jupiter and Juno), there exists a necking. The temple of Concord presents still a third species, the volutes being doubled and inclined at an angle of 45°. The height and projection of the entablature are nearly equal, varying between one-quarter and one-fifth of the height of the column. The architrave and frieze are equal in height, and are a little less than that occupied by the cornice. The frieze is either with or without sculpture. The bed-mouldings of the cornice generally consist of a *cyma-reversa*, a dentil course, and ovolo, separated by fillets; together occupying rather less than one-half of the entire height of the cornice; the corona and crown mouldings, with the cymatium, complete this order. The whole of the Roman possessions were covered with massive structures which embodied the Roman spirit of defiance and the supremacy of the conqueror. But the gigantic features of Roman architecture were revealed in all their glory within the precincts of the Seven Hills; and although Antioch and Baalbec were adorned with architectural masterpieces, as well as parts of Africa and Palestine, and the greater part of western Europe, still the powerful and vital essence of Roman art shone with its most dazzling magnificence in the plains of the *classico Campagna*. It would be in vain to attempt to describe the various constructions of utility and splendor with which Rome and her possessions were covered. We find everywhere in her own limits and in her possessions, roads, aqueducts, bridges, ports, forums, basilicas, temples, mausoleums, palaces, baths, theatres, amphitheatres, hippodromes, naumachias, triumphal arches, cloacas, prisons, fountains, cisterns, monumental columns, villas, grottoes, and markets. During the reign of Augustus, Rome was

adorned with its beautiful Pantheon, and Asia was endowed with many beautiful structures, and Athens itself became embellished with the famous temple of Jupiter Olympus. The baths, or *therma*, of Augustus, Nero, Titus, Caracalla, and Diocletian, were renowned for a magnificence which was hardly surpassed even by their palaces. In fact, throughout all the Roman structures, from the palace of the Cæsars to the villas of Adrian, Sallust, and the epicure Lucullus, the greatest display of splendor and luxury prevailed. But, of all their structures, perhaps the most stupendous was the Colosseum, the Flavian amphitheatre, capable of containing more than 100,000 spectators. It was partially destroyed by Robert Guiscard the Norman, in 1084, from his having conceived the idea that it was to be used as a citadel against him. Though from the ruins the popes have taken sufficient material to construct the palaces of the Farnese, the Cancellaria, and that of St. Marks, still the cragged and crumbling remains are gigantic and imposing.

—ARCHITECTURE OF THE MIDDLE AGES. But the spirit of classic art seems to have waned with the glory of the Roman empire. The science of building became perverted, and the fame which the Romans had attained in architecture became a memory only. Christianity with its regenerating power revived the spirit of religious zeal which again became, as in olden times, the instigator and prime motor of artistic embodiments of adoration, and the imperial basilica became the temple of the most high God of the Christian. The architecture of this period was composed of Greek and Roman details, combined under new models and forming structures wholly different from the antique originals. Through many successive centuries, the Roman school of art continued to suffer changes. From the fragments of edifices which were torn down to form new structures, arose combinations at once singular and corrupt. The transition styles which then prevailed were, from their characteristic peculiarities, designated as the Latin, the Byzantine, the Lombard, the Saxon, the Norman, and the Romanesque, together known as the old Gothic. During the 4th century architecture had reached the very acme of its decadence. In the religious edifices of this period marked evidences exist of an utter want of artistic feeling. The sterling principles which had been the glory of Roman and Grecian schools, were either forgotten or not understood. Encouragement to artists was not wanting, for Constantine repaired the ancient monuments and constructed others. The large sums appropriated by this emperor for the establishment of architectural schools throughout his dominions, could not have failed of the happiest results, had not the taste for artistic beauty disappeared to make room for that of a meretricious splendor. Great liberties were taken during this period with all the architectural members. Arches with and without archivaults were made to spring immediately from

the capitals of the columns. Orders were superimposed with broken entablature; in fact, this latter member was altogether done away with in some cases. Grace was wanting in the mouldings and sculpture; the different orders were employed in the same peristyle, and the whole school of architecture became the prey to the general system of innovation which then existed. It appeared to disencumber itself of the thralldom of traditional rules, and to seize, as if at random, upon designs which seemed to meet the exigencies of a new faith. It was, in fact, the style of a people morally transformed, but whose social exterior was still pagan. This condition of things continued under Constantine when the arts dwindled into comparative insignificance. During this state of things, hordes of barbarians invaded every province of the empire. This universal conflict was not calculated to give a new impetus to architectural art, nor to promote its progress. Italy, however, under the Goth and Ostrogoth rule, evinces in some measure a renewed architectural zeal. Theodoric repaired the walls and drains of Rome, reorganized the *Comitia Romana* (who guarded day and night the monumental structures of the capital), and by his own devotion to the arts, together with that of his daughter, Amalasontha, revived the spirit of a fast perishing craft.—After the transfer, by Constantine, of the imperial seat to Constantinople, the arts were again successfully cultivated by the Greeks, who made free use of the architectural treasures left by the ancients. Then appeared the dome, the glory of the Byzantine school, supported by its pendentives highly ornamented with mosaic. This principal feature of the Byzantine school, induced their architects to abandon the Latin cross (which form had gradually grown out of that of the Roman basilica), in the plan of their churches: introducing, instead, the Grecian cross, whose branches are of equal length. The central dome no longer rested on circular walls, but was borne by 4 arches resting on pillars placed at the 4 angles, in plan. Pendentives were introduced in order to sustain the circular dome, as otherwise the triangular space in the 4 corners would have been left without support, the diameter of the dome being equal to one of the sides of the square. In some cases the corner pillars were square, presenting an angle only at the corners, thereby giving an extraordinary degree of lightness to the structure. The semicircular arch of the Romans was often elongated, in order to attain an equal height with different spans. The dogmas of the Iconoclasts obliged the architects to seek some other means of enriching their temples; hence the profusion of mosaic work. Their sculptured ornaments represented foliage in bas-relief, and interlaced lines. The capitals of the columns were square blocks similarly carved, tapering down at angles to join the circular shaft. In their style of decoration, as well as in various other particulars, they seem to have

been influenced by the Mohammedans. Under Narses and Belisarius the dome was introduced into Italy and was seen adorning their edifices. The Byzantine style, whose chief promoters were Anthemius of Tralles, and Isidorus of Miletos, became the basis of the modern Persian, Russian, and Moslem schools. We find its peculiarities existing during the middle ages in Greece, Italy, Sicily, Spain, Arabia, and India. Among the chief edifices of the Byzantine school may be instanced that of St. Marks, at Venice, that of St. Vitalis, at Ravenna, and that of St. Sophia, at Constantinople,—the latter being one of the most magnificent of the eastern empire. The Arabs, the Saracens, and the Moors, introduced into Europe certain forms of architecture which, though differing in very many features from the classic styles, were still founded on the remains of the Grecian school, blended with the oriental elements of the Byzantine. The chief peculiarity of these styles was in the form given to the arch. The Saracenic arch was of greater depth than width. The Moorish style was distinguished by arches in the shape of a horseshoe or a crescent. The Saracens and Moors are, however, so completely one people, that it is with difficulty that the differences of their essential features can be discriminated. Their mural ornamentation, styled arabesque, presented more varied designs of graceful and ingenious combinations of geometrical and floral traceries than had before been known. The reproduction of animated forms was prohibited by the sacred laws of the Koran. Another striking feature of this school is the peculiar way in which they ornamented their pendentives, by a series of small columns with little niches placed one above another, covering not only the surface of the inner, projecting angles, but forming at times the super-entablature of the edifice. The numerous mosques, palaces, bazaars, tombs, and other edifices of the Moslems, existing throughout various parts of Europe, Asia, and Africa, attest the great similarity existing between this style and the Byzantine; this is attributable to the employment of Greeks on their works. A fact worthy of note, also, is that the Moslem structures furnish examples of the pointed and ogee arches, whence according to many they were brought into Europe. The Lombards having possessed themselves of the Venetian territory toward the middle of the 6th century, there founded their kingdom, which lasted until 974, when Charlemagne subjected Italy to his power. Converted to Catholicism, the Lombards adopted the arts of the people they had vanquished; and, as in Lombardy there existed but few ancient temples whose materials could be employed in other structures, we find them originating a complete and systematized style, which at length pervaded all districts where the Latin church had extended its influence; the people of each country where it was introduced modifying it to suit their climate, customs, and wants. Its

branches are variously known as the Saxon, Norman, Merovingian, Carolingian, &c., which, together with the Teutonic, Moorish, and Saracenic, were styled old Gothic, and out of which grew the pointed style, after the introduction into Europe of the pointed arch. During this epoch, plain, banded, fluted, and polygonal columns, in spiral or zigzag, were clustered, broken, or knotted together. Their capitals were foliated or had various grotesque animals sculptured on them; they were supported on brackets variously carved, or rested upon the backs of animals, which replaced the pedestal. Every license was taken with their entablature, even to the suppression of it altogether. Against the jambs of arched openings were often placed numerous columns supporting the arched mouldings. Oftentimes a greater arch encompassed several smaller ones, supported by pillars which intersected each other in various ways. Their openings were quite elongated and often accoupled; the circular window, or rose, was also very frequent in their frontispieces. Semicircular, elongated, flat, horseshoe, and foiled arches are to be found, ornamented and simple, and serving either as a decoration, crowned their walls, or supported horizontal bands, dividing into panels their walls, which were likewise panelled off by long pilasters or flat buttresses. The angles of their churches (generally in plan in the form of the cross) were often surmounted by a sort of pinnacle. Ribs are also found in their vaulted cellings. Towers first accompanied the churches, later they formed a part of the same edifice, flanking or decorating the middle of the façades. The earlier examples were square, afterward round, and subsequently of a polygonal form. The roof, assuming a more and more pointed shape, approaching the form of the spire, as it was introduced in countries where the climate was more severe. The monasteries and convents generally contained an interior court surrounded by porticoes, about which were placed the cells of the inmates. The lower stories of the royal palaces and town halls also presented a similar disposition. External porticoes, or lodges, also existed. During this period it is supposed that the construction of houses in stories became general.—The habitations of the mass of the people were poor and irregularly planted about the town hall, in the cities, or clustered about those massive structures (the feudal castles) erected as fortresses, into which the arrogant possessor might retire, and whence he might sally to harass the country at pleasure. These edifices consisted of a main tower, or keep, the walls of which were from 6 to 12 feet thick, with windows, consisting of holes 1 or 2 feet wide, placed at irregular intervals. The several floors were constructed on arches; the roof was flat, or had battlements, and possessed a notched parapet for the purposes of defence. The main tower was surrounded by a court-yard protected by a high wall, and the arched entrance was strongly secured by a

falling gate or portcullis. Around the whole was a deep ditch, or fosse, which could be filled with water. Many of the castle fortresses were on a plan of great magnitude, consisting of two or more towers and divers inner buildings, including chapels. During the gloom and the disastrous influences of the bloody wars of the middle ages, we find the venerable institution of freemasonry nourishing under the ashes of its ancient mysteries, the social fire of architectural art. While the whole of Europe was convulsed with the international and social strife and invasions of barbarians which resulted in its complete reorganization, the study of the arts, sciences, and literature, took refuge in the monasteries.—In Italy during the 10th century we find the corporation of *Magistri Comacini* exercising great influence, and giving to Grecian artists shelter from the political troubles of the East, and from the persecutions of the Iconoclasts. These artists promulgated among the Lombards the Byzantine elements of structure, whose influence, as we have seen, was more or less felt throughout the architectural schools of Europe.—Under Erwin von Steinbach, of Germany, during the 13th century, the Hütten, or lodges, were organized, one object of which was the study of architecture, over which they exercised a powerful influence. In Strasbourg existed the lodge of the *Haupt-Hütte*. Under Godoyne, or Josse Dottzinger, of Worms (who, in 1444, succeeded the architect J. Hult), the various sects of the German freemasons were incorporated into one body, and, in virtue of an act passed at Ratisbon the same year, the architect of the cathedral of Strasbourg was elected the sole grand-master of the fraternity. These *magistri lapidum* were likewise sole directors or supervisors of all the religious structures. Protected by the church, sole depository of the arcana of the early masters, architecture passed from the old Gothic through various phases of the pointed or ogival styles. The influence, the enterprise, and daring achievements of its promoters seemed to strike the contemporary ages as well as posterity with a religious awe; and the intellectual power and energy of the people appear to have been concentrated and expended upon architecture. The revival of the spirit of emulation engendered by the impetus thus given to art would seem to have possessed a regenerating power, and to have resuscitated Europe from the condition of moral syncope into which it had fallen. The spirit of an age is embodied in its architecture. In the obscure depth of the vault of the so-called Gothic cathedral, the mind is inspired with solemn and devotional feelings. The style and decoration of the ancient Christian churches are by no means accidental. They speak a religious, figurative, and mystic language, and are symbolic revelations of faith. The cathedrals in the pointed style most justly deserve the admiration of the lovers of architectural beauty. The grand, bold, and regular proportions, the unwearied industry

displayed, the stupendous exterior masses, and the severe and awe-inspiring solemnity of the interior, call forth unbounded praise. The pointed style customarily is divided into 8 periods—the 1st, or primary, dating from the latter end of the 12th century; the 2d, or decorated, or rayonnant, from the commencement of the 14th century; and the 3d, or perpendicular, or flamboyant, from the end of the 14th century, which was superseded by the REVIVAL OR RENAISSANCE OF THE 16TH CENTURY. The essential element of this style is the pointed arch. Were it not for this feature it would be often difficult to distinguish between the earlier works of the 1st period of the pointed and the later works of the old Gothic. It is during the 1st period that the spire surmounting the tower becomes of so great importance, forming one of the striking characteristics of this style. In the finer examples it is octagonal and very pointed, either plain or ribbed, sometimes pierced, sometimes crocketed, and invariably bearing a finial. Buttresses and flying buttresses also form a striking feature—these latter being somewhat massive and heavy at first, but gradually becoming more and more elegant as they approached the 2d period. The sets-off are formed by inclined slabs, or by a pediment with finial, the face of the buttresses being ornamented at times with panels and niches; in some cases also the space between the arches of the flying buttresses is occupied by radiating columns. The parapet is uninterrupted, and is either decorated or plain. Turrets were either square or octagonal; their pinnacles being mostly of the latter form, either crocketed or not. The rose windows of this period are quite simple: small columns radiating from the centre receiving foiled arches tangent to the circumference. The lancet arch predominates. The windows are very long and narrow, and are either simple or coupled, in which latter case a slender column forms, as it were, the mullion. The ribs of the groined ceilings are decorated with bosses at their intersections, and rest either upon corbels, or upon the shafts of slender columns which descend to the pavement. The piers are either simple in plan, or present several shafts clustered around a core of a circular, elliptical, or cruciform shape. The sculpture, wherein the national flora is introduced, supersedes altogether the ornamentation previously employed; rosaces, trefoils, quatrefoils, and panelling, are introduced to ornament their works in various ways.—During the 2d period this style arrived at its apogee. A greater elegance and richness pervade this period, whose characteristic features are thereby distinguished from those of the previous one. The flying buttresses are extremely graceful, those at quoins being placed diagonally. The parapets are pierced or embattled, as are also the pediments. The windows gradually assume a less pointed form, the head of the arch being in general equilateral. Replacing the small

columns in the windows are moulded mullions, which form graceful flowing traceries in the head of the arch. Beside, the drip-stone is often surmounted by a canopy or pediment resting on masks, and enriched with crockets and a finial. The clustered columns comprising the columnar piers are more elaborate, and generally placed diagonally. Their bases become more important, and are placed upon octagonal plinths clustered together. The ribs, bosses, and carved ornaments throughout have more relief, and are more elegant.—The 8d period is remarkable for its profuse ornamentation. The panelled walls, with their niches, tabernacles, canopies, and screens, highly decorated; the flying buttresses enriched with pinnacles and tracery; the corbelled battlements and turrets, the balustrades, intricately carved and pierced, are fully characteristic of this epoch. The arch presents many varieties of form. Together with those common in the preceding periods, others exist very depressed; being, in many cases, almost flat. The ogee, or contrasted form, also appears in the openings and pediments. The doors are generally square-headed, the spandril above being enriched with traceries. The rose windows during the 15th century are most intricate in tracery. The groined vaults, also, are very elaborate, whilst their bosses and pendants are unequalled for their wonderful carvings. The mouldings of the archivolt, more prismatic in their forms than in the previous periods, continue down uninterruptedly to the foot of the openings; thus doing away with the columns heretofore employed. The appellations of perpendicular and flamboyant, by which this period is also known, arose from its peculiar mode of tracery.—With the reformation came the gradual abandonment of the pointed styles, accompanied as it was by the dissolution of freemasonry, occasioned by the withdrawal of the patronage of the pope. The consequent architectural reaction sprang less from admiration and a thorough knowledge of the classic styles, than from a necessity of returning to the antique. This style had lost its able promulgators, and with it the arcana of its system of architecture. The return, however, to the rules of the ancient schools of design, was progressive, save in Italy, where they had constantly exercised a powerful influence over the artistic spirit of the country, its architecture having retained through the middle ages the characteristics of the classic schools. We find here, however, several beautiful edifices, termed by the Italians *in maniera Tedesca*, which, notwithstanding the contradictory statements made by Muratori and Maffei, were the work of German artists. During the 14th century, or the trecento period, we discover in Italy, in the secular structures more especially, numerous examples exhibiting a return to the classic styles, which possess simplicity and boldness. At length, in the 16th century, the classic taste prevailed throughout Europe, and hence the different names, cinque

cento, renaissance, revival, given to that style which supplanted everywhere the so-called Gothic architecture. Brunelleschi of Florence was among the first to encourage and disseminate this taste for a return to the classic architecture. He had numerous distinguished followers; among whom were Bramante, Sangallo, Peruzzi, San Michele, Vitruvius, Alberti, Palladio, Scamozzi, and many others, who obtained a well-deserved reputation. In their productions, the different elements of the classic style are happily introduced. The application of these elements to ecclesiastical, and more especially to secular structures, accounts for the liberties taken with them, amongst which we will cite the following: the great variety given to the intercolumniation of columns; the superposition of different orders, with and without broken entablatures; the frequent use of engaged columns and pilasters; the various forms given to the pediments; the substitution of columns for piers supporting arcades; the decoration of blank walls with medallions, foliage, and scrolls of various sorts, together with designs of animals, arrayed in imitation of ancient arabesques. These, and many other so-called liberties, originated a style peculiarly well adapted to the wants of modern civilization. Michel Angelo made several innovations in architecture, as well as in the other arts. He abolished many capricious ornaments. And instead of superimposing several orders, distinguishing as many stories, he employed one, comprising the whole height of the edifice. To him we are indebted for certain bold elements of design, although generally wanting in grace and purity. To his followers, Bernini, Boromini, Fontana, and others, is to be attributed, in a great measure, the cause of the decadence which followed the architecture of the 16th century.—From Italy, the renaissance was first introduced into France. Among those who distinguished themselves in this kingdom, were Jean Bullant, Philibert de Lorme, and Pierre Lescot. Later appeared De Brosses, Du Cerceau; and, finally, Perrault, under Louis XIV., tried in vain to revivify a taste for the pure and simple elements of ancient architecture. England boasts likewise of her Inigo Jones—her Palladio, followed by Christopher Wren, Sir William Chambers, Sir Robert Taylor, and many others of merit and distinction.—**MODERN ARCHITECTURE.** The architectural elements of the 19th century would seem to be purely eclectic. It is but just, however, to make an exception in favor of the modern French school, the Romantique, wherein the Grecian rather than the Roman elements are introduced, and whose designs, portraying simplicity, grace, purity, and harmony, form a singular contrast with the old edifices of the French capital, on whose blackened mass is traced the incrustated atmosphere of ages. With the introduction of steam, new wants were created, vast depots and other structures were required, and iron came naturally into general

use, from its being a material easily wrought; and from its ductile qualities capable of covering an extended area, its use proving more economical than the materials formerly employed. Thus far, the most important structure upon which this material has been throughout employed, is the crystal palace of Sir Joseph Paxton. Iron is to-day, to a great extent, employed in shop-fronts, on account of its dispensing with the ponderous stone masses which were formerly used, and which excluded much light. We find it also applied in the construction of warehouses and in public buildings, it being fire-proof. In the United States it is much used in façades. The introduction of iron, as an architectural material, taken in connection with many special circumstances attendant upon the prosperity of the United States, must inevitably influence and promote art, and give it a natural and necessary tendency to compose, combine, and originate, new architectural features.

ARCHITRAVE, in architecture, the lowest of the 8 divisions of an entablature, resting immediately upon the column. It is named from the Greek word *apox*, chief, and Latin *trabs*, a beam, because, in wooden buildings, the architrave consisted of a beam fixed upon the capitals of the pillars. It was called in ancient architecture the epistyle. The use of the architrave is to bind the columns together. The ancient architraves were generally a single stone reaching from column to column, but in modern times they are seldom monolithic, but composed of several stones so adjusted as mutually to support each other. The form of the architrave varies in the different orders; in the Tuscan it has but one stripe, surmounted by a fillet; it has two faces in the Doric and Composite order, and three in the Ionic and Corinthian.

ARCHIVES, the records of a nation. Stone has proved a more faithful depositary than metals; yet stone has shown itself a much weaker guardian of such treasures than materials far more frail. In the palaces of Nineveh Mr. Layard has shown us that the alabaster slabs, which bore the records of one dynasty, were smoothed or reversed to receive the laws or the laudations of another. In some cases they placed their longest inscriptions on the backs of the slabs, and thus built them into the wall, hoping that they might in this way foil the destructive malice of their foes. Nor were they unsuccessful in their aim. Some inscriptions have thus been preserved to us, and the patient labors of Rawlinson and Hincks are gradually changing their darkness into light. The celebrated rock tablets of Behistun, or Bisutun, at whose trilingual inscriptions Sir Henry Rawlinson has been so long laboring, seem to have owed their preservation to their inaccessibility. A shrewd idea about the preservation of archives is attributed by tradition to Seth, who is said to have written the history of the antediluvian ages on tablets of clay, making 2

copies, one of which he burned and left the other unburned. As a proof of the durability of this material may be mentioned the great number of tablets of burnt clay recently (1848) discovered by Layard in the record chamber of Kouyunjik, more or less broken, it is true, but still legible, and constituting undoubtedly some of the most ancient archives in the world. The hieroglyphic records of Egypt owe their preservation to the solidity of the monuments on which they were inscribed, and to the fact that mud hovels being a sufficient shelter for the inhabitants of the country, these structures were rarely or never drawn upon as quarries. Yet the most perfect of Egyptian records is the "Book of the Dead," preserved upon frail papyrus. The Greek tablets of metal seem all to have disappeared. The marbles of Halicarnassus were rescued after having been built into the walls of a fortress, and others have been preserved with difficulty after being mutilated. Here, too, the frail parchment or papyrus proved superior to monumental marble; and the same is true of the Romans, though occasionally, as in the case of the tablet of Claudius, preserved at Lyons, metals have proved lasting memorials. In America, with the exception of the Mexicans and Peruvians, the various Indian tribes have never got beyond rolls of bark and painted skins for their records. The Peruvian archives consisted of knotted strings of different colors called *quippus* (from *quippu*, a knot). The red strings referred to war, the yellow to corn, &c. When first used these knots signified numbers only, but they were afterward invested with a figurative meaning so as to convey ideas to posterity when aided by the cultivated memories of the *quippu-camayocs* (superintendents of knots); and it is said that there are still some Indians in the interior of Peru who are able, but not willing, to interpret these records of their ancestors. The picture-writing of the Mexicans, however, was superior to this contrivance; since it sufficed for the transmission of their laws, tribute-rolls, mythology, calendars, and rituals, as well as their political annals. In this case also frail materials have proved safe depositaries; for these archives were written on cotton cloth and prepared skins, but still more frequently upon a sort of paper manufactured by them from the leaves of the American aloe, and this is said to have been more soft and beautiful than parchment. Modern governments have wisely availed themselves of the security afforded by the press; some of them, as, for instance, the British and the French, have systematically distributed to foreign libraries copies of their most important records as the best means of preserving them.

ARCHIVOLT (Gr. *apox*, chief, and Lat. *volutus*, a contour), in architecture, the inner contour of an arch, or the ornamented band of mouldings round the arch-stones of an arch, terminating and resting upon the imposts. It is, like the architrave, variously adorned, according to the richness or simplicity of the order.

ARCHONS, certain magistrates of ancient Athens. According to the old tradition, Codrus, king of Athens, having, about 1068 B. C., sacrificed his life to save his country, the people, or rather the nobles of that city, determined that, as no one was worthy to succeed this hero, they would have no more kings, and accordingly intrusted the highest power to a magistrate, whom they styled archon (ἄρχων, a ruler), whose authority was somewhat more limited than that of the ancient kings. Medon, the son of Codrus, was the first archon, and the office was hereditary in his family until 714 B. C., when it was thrown open to all the Eupatridæ or patricians. Previous to the year 752 B. C., the archon held his office during life; at that time the duration of the term of that office was limited to 10 years; and in 683 B. C. to one, while, at this latter epoch, the office was divided among 9 persons, instead of being held by only one, as previously it had been, and several years afterward, though precisely at what time is not known, the archonship was made accessible to the citizens generally, who were subject, however, to some restrictions as to qualification. The power of the archons, at first almost supreme, became limited by degrees, and, at last, they had very little influence in the management of the government. One of the 9 archons was called the archon, as being the chief of the whole body, and his duty was to superintend the greater Dionysia festivals, in honor of Bacchus, and the Thargelia, in honor of Apollo and Diana, and to exercise a general care over orphans, and jurisdiction in matters relating to the law of inheritance. He was sometimes styled eponymus (ἐπώνυμος, one from whom something is named), because he gave the designation to the year, as did the consuls at Rome. The 2d archon was entitled king (βασιλεύς), as he occupied the place of the ancient kings with regard to all public religious worship. He had personal jurisdiction in disputes concerning the rights and duties of priests, and was public prosecutor against all persons who were accused of having committed offences against religion, and against murderers. He had also a general superintendence of all matters relating to religion, and particular charge of the celebration of several festivals. The 3d archon was called polemarch (πολεμαρχος, commander-in-chief), and originally had supreme control over the army. The polemarch Callimachus was in command of the Athenian forces at the battle of Marathon, 490 B. C., but this is the latest known instance of the polemarch's having exercised such authority, his duties being, in aftertimes, confined to attending to the affairs of the alien residents of Athens, just as the archon eponymus had the care of those of the citizens, to the management of the funeral games in honor of such Athenians as had fallen in battle for their country, and the superintendence of other similar rites. Each of these three archons was allowed 2 assistants, whose appointment had to be sanctioned by

the senate. The rest of the archons were styled thesmothetæ (θεσμοθέται, lawgivers), though this name was also sometimes applied to the whole body. Their duties were mainly connected with the administration of the law, which they annually revised. They received charges against persons accused of any crime or misdemeanor, brought cases before the courts for trial, had the superintendence of voting in popular assemblies, and the ratification of treaties with foreign states, arranging the condition under which actions at law might be brought between citizens of such states and Athenians, gave notice of the days of sitting of the courts of law, appointed the dicasts or jurymen, took care that all new laws were properly entered, and formed a court of justice having jurisdiction in certain cases. These were their principal duties. In the times when democracy was powerfully developed at Athens, the archons, previously elected, were chosen by lot. The examination to which they were obliged to submit before they could enter upon their office was, however, a slight restriction on the indiscriminateness of such a choice. They were exempt from extraordinary burdens and taxes, and if any one insulted or struck one of them, while wearing his badge of office, which was a chaplet of myrtle, the offender was rendered infamous, and deprived of all civic rights. At the expiration of their year of office, they were obliged to submit to an examination as to the manner in which they had performed their duties, and, if such examination proved satisfactory, were admitted members of the court of the areopagus. The name archon was also sometimes applied to certain civil and religious officers in the eastern empire.

AROHYTAS of Tarentum, an Italian Greek, contemporary with Plato, and famous as a philosopher, mathematician, general, and statesman, accidentally drowned while crossing the Adriatic. He is said to have been 7 times general of the Tarentine forces, and to have been victorious in every war which he conducted. He is also said to have been repeatedly intrusted by his fellow-citizens with the management of their political affairs, and to have evinced no less capacity in council than in action. He was on very intimate terms with Plato, with whom he kept up a regular correspondence. He was much addicted to mathematics, and was the first who applied mathematical principles to practical mechanics. He also constructed various machines and automata. As a metaphysician he is supposed to have furnished both Plato and Aristotle with many of their ideas and principles. Numerous fragments of the works ascribed to Arohytas have come down to us, some of them genuine, some spurious. The best collection will be found in the *Opuscula Græcorum* of Orellius.

ARCOIS-SUR-AUBE, a town of France, department of Aube; population, 2,652. It contains cotton and spinning manufactories, manufactory of cotton hosiery, and is an entrepot

for iron, and for the wooden wares made in the Vosges. Near this town, March 20, 1814, Napoleon defeated a division of the allied army.

AROSZEFFSKI, CHRISTOPHER, governor-general of Brazil, born toward the end of the 16th century, died at Lissa, in Poland, in 1668. He was son of a Polish colonel, and left his native land on account of his religious opinions, to enter the military service of Holland, then at the height of her glory. He rapidly rose in rank, and upon the conquest of Brazil by the Dutch, was appointed its governor-general. He built extensive fortifications at Rio Janeiro, Bahia, and Pernambuco, and beside being a brave and skilful soldier, was a distinguished mathematician. The Dutch caused a medal to be struck, in commemoration of his services.

ARCO, a charming little Tyrolean town, not far from the lake of Garda, in the valley of the Sarca, with 2,000 inhabitants, who support themselves by the olive oil and silk trades. It is the residence of one of the historical families of Germany, represented at the present day by Count Leopold Arco, born in 1786. The genealogy of the family, whose domains came in 1614 under the sway of Austria, goes as far back as the 12th century, and several of the counts have occupied civil and military positions of eminence. The most distinguished member of this family was born in 1479, died in 1546; he was remarkable as a soldier and a Latin poet.

ARCOLE, a village of Austrian Italy, on the Alpine, 15 miles E. S. E. of Verona. It contains 1,600 inhabitants, and is famous for the victory gained there by Napoleon over the Austrians, Nov. 17, 1796.

ARÇON, JEAN-CLAUDE ÉLÉONORE D', sur-named **LE MICHAUD**, a French engineer, who distinguished himself by the invention of floating batteries, born at Pontarlier in 1738, and died in 1800. He was intended for the pulpit, but having evinced a genius for drawing plans of fortifications, he was transferred to the military school of Mézières. He was present in 1780 at the siege of Gibraltar, where the idea of floating batteries suggested itself. The duc de Crillon planned an attack on Gibraltar, in accordance with Arçon's suggestions, but it was not successful. In 1798 he distinguished himself in the wars with Holland, but some false charges having been brought against him, he left the army, and devoted himself to literature. His most important work is entitled, *Considérations militaires et politiques sur les fortifications*, published in 1795 at the expense of the French government.

AROONA, or **ARKONA**, a promontory forming the north-eastern extremity of the island of Rügen, in the Baltic sea. It rises in steep cliffs out of the sea, but its surface is fertile. A temple to the god Swantewit, formerly venerated by the Slavonians of northern Germany, once stood here, together with an old Vandal castle. But in the year 1168, Waldemar I., king of Denmark, stormed the castle, and

burned the temple, and on the spot where they stood a light-house now rises.

ARCOB, RODRIGO PONCE DE LEON, duke of, viceroy of Naples during the insurrection headed by Masaniello, was born in Spain, in the latter part of the 16th century. After filling several responsible stations, in 1646 he was appointed viceroy of Naples. He found the people oppressed by many grievous taxes, imposed by the Spaniards to defray the cost of their wars with France, Portugal, and other nations, and instead of attempting to alleviate their condition, lost no opportunity of adding to their burdens. About this time the French sent several expeditions against the Spanish possessions in Italy, and Arcob seems to have eagerly availed himself of this pretext to add to the already enormous taxes exacted from the people. His edict announcing this, which appeared Jan. 8, 1647, was the signal for a popular outbreak, of a most violent and sanguinary nature, headed by Tommaso Aniello, a fisherman, better known as Masaniello. The people demanded the abolition of the tax on bread, and the restoration of the privileges of the emperor Charles V. Arcob, after a vain attempt to appease them, took refuge in flight, but was arrested, and compelled to take an oath to redress the public grievances. Having succeeded, shortly afterward, in gaining possession of the citadel, he refused to ratify his promises, whereupon the insurrection blazed forth with greater fury than ever, and was participated in by all classes of citizens. Finding resistance in vain, he again yielded to the demands of the people, but cunningly took advantage of the infatuation with which a sudden elevation to power had seized Masaniello, to work his destruction. He invited him and his wife to the royal palace, humored his arrogance, and even saluted the pair with the title of duke and duchess, and soon after procured his assassination, amidst the acclamations of the fickle populace. Public confidence in the viceroy, however, was not yet restored, but the opportune arrival of the fleet of Don John insured his safety, although the insurrection was not finally quelled for some months. Arcob retired from office Jan. 28, 1648, just a year after the commencement of the outbreak, and died in disgrace. (See **ANIELLO**.)

ARCOT, a city and district of British India, forming part of the Carnatic, and in the presidency of Madras. The city is on the river Palaur. The district was formerly the possession of an independent sovereign, but the nabob Auwar-deen was killed in battle in 1749, with an opponent supported by the French. Subsequently it was taken from them by Lord Clive, who resisted the French in a siege. It was taken by Hyder Ali, and in 1801 the city and district were finally ceded to the British by the nabob, they making him an annual allowance, and undertaking to pay all his creditors, a matter of no little difficulty, owing to the con-

fusion of his affairs, and the immense amount of the claims, about \$85,000,000. The city was fortified, but the fortifications have been converted into gardens, and so much only of them retained as would serve for an embankment against the inundations of the river.

ARCTIO (Gr. *αρκτος*, bear), relating to the north pole, the two constellations of the Great and Little Bear being near the north pole of the heavens.—The **ARCTIC CIRCLE** is a circle round the north pole of the earth, about lat. $67^{\circ} 30'$. Neglecting the refraction of light, an observer on the arctic circle would have his longest day in summer just 24 hours long, the sun hiding half his disc below the northern horizon at midnight of that day. His longest night in winter would be also 24 hours, the sun showing half his disc in the southern horizon at mid-day at the winter solstice. This line bounds the north frigid zone, although that zone may also be defined as of irregular shape, bounded by the isothermal line on which the average temperature of the year is at the freezing point.—**ARCTIC HIGHLANDS**. The tract thus designated forms the north-eastern angle of the American continent, from the mouth of the Mackenzie river to the shores of Hudson's bay. The surface of this vast tract is rugged and broken, and abounds in lakes and water-courses. The climate of the entire region is the most severe on the American continent. The mean temperature of the winter is from 53° to 60° below the freezing point. The mean temperature of summer is not above 4° or 5° F. The whole region is destitute of wood, and is almost a desert.—**ARCTIC SEA**, the ocean which washes the northern shores of America and Asia, and extends thence to the pole. Those portions nearest the American and Asiatic coasts are blocked up by never-melting ice, which makes navigation impossible. Between the American coast and lat. 80° , numerous little-known "lands" and islands dot this ocean. Between lat. 80° and the pole, it is now generally conceded, there lies a tract of nearly open water, known to geographers as the open Polar sea. The analogies of science (see Maury's "Physical Geography of the Sea"), as well as the discoveries of Kane, Inglefield, and Belcher, all go to prove the existence of this open sea. In Kane's expedition, the view of this water was obtained from a precipitous headland, in lat. $81^{\circ} 22' N.$ and long. $65^{\circ} 35' W.$ Dr. Kane gives the following reasons for regarding the water here seen as an iceless open sea:

1. It was approached by a channel entirely free from ice, having a length of 52 and a mean width of 36 geographical miles.

2. The coast ice along the water line of this channel had been completely destroyed by thaw and water action, while an unbroken belt of solid ice 126 miles in diameter, extended to the south.

3. A gale from the north-east, of 54 hours' duration, brought a heavy sea from that quarter, without disclosing any drift or other ice.

4. Dark nimbus clouds and water sky invested the northern horizon.

5. Crowds of migratory birds were observed thronging its waters.

ARCTIC DISCOVERY. Until within a recent period it was believed that Columbus and Cabot were the actual first discoverers of the American continent. Careful researches on the part of northern antiquarians, however, would seem to prove, that portions of the American coast—some maintain as far south as what is now Long Island—were known to the seamen, the sea kings of Norway, as early as the 9th and 10th centuries. Newfoundland and Greenland were the regions best known to these rovers, from whose slight accounts it is supposed that the climate of those regions was much milder at that period than it is now. In the year 1000 a Norwegian, with a crew of Icelanders, landed on the coast of Massachusetts, which he named *Vinland*. This party erected monuments on an island in Baffin's bay, where they were discovered in 1824. They established colonies on the Greenland coast, which flourished for some years, making great gains by the fisheries, which they pursued as far as Lancaster sound, and even to Barrow's straits. Greenland and Spitzbergen were for several centuries prosperous colonies. Iceland, then at the height of its prosperity, found here a fair field for the enterprise of its inhabitants, who not only followed commerce and the fisheries, but propagated their faith in the new land, and built up numerous churches and convents, whose ruins are still found along the Greenland coasts. The Icelanders and Northmen, then, were the first arctic explorers. Theirs, however, was an exploration which had no object beyond the immediate profit of the adventurers. They left no records of their voyages beyond their pecuniary gains and the adventures they encountered, and seem to have been little aware of the importance of the great discovery they had made. As the Greenland and Spitzbergen colonies perished, and the most important Icelandic expedition was lost, and never heard from, while Iceland itself and the countries of the north were distracted by internal troubles, no trace of the discoveries made by these people was communicated to the rest of Europe. In 1880, two Venetian navigators, Zeni by name, voyaged to the north, and brought back tidings of what they had seen. Their discoveries, however, resulted in nothing important. In 1497 the Cabots, John and Sebastian, landed at Labrador, and afterward projected a voyage toward the north pole. They penetrated as far as $67^{\circ} 30' N.$, that is to say, about half way up Davis's straits. This may be called the first actual northern exploring voyage. Columbus set out upon his voyage with the object of discovering a shorter passage to the Indies. The Cabots seem to have been animated by the same desire. Finding a continent barring their progress directly westward, they at once stretched away north, thinking to sail westward, around its northern terminus, and thus reach the much desired Cathay. These, then, were the first seekers for the north-west passage. The next ex-

plorers were the brothers Cortereal, who made in all 3 voyages, penetrating as far as 60° N., but resulting in nothing but disaster to the adventurers and loss of life. This was in 1500, '1, '2, '3. In 1553 Sir Hugh Willoughby was sent out by the Muscovy company to find a N. E. passage to Cathay and India. He penetrated to Nova Zembla, was driven back by the ice as far as the mouth of the Arzina in Lapland, and here the gallant commander and his crew were afterward found frozen to death. In 1576-'78, James Frobisher made 3 voyages to the north-west. He discovered the entrance to Hudson's strait and Frobisher's strait leading into Hudson's bay. Beyond this no material result was achieved. These were the first voyages on which we hear of scientific investigations being made. In 1578 Sir Humphrey Gilbert, a relative of Sir Walter Raleigh, received authority to make a voyage of discovery on the American continent. He was a firm believer in the practicability of a north-west passage. A discourse of his upon the subject is yet extant. Of Sir Humphrey's marvellous adventures and chivalrous bearing on his voyage of exploration, as these were practically without result, we have not space to give details here. Next followed (1585-'88) Davis, who made more important accessions to a knowledge of the Polar sea than any of his predecessors. He first fairly discovered the strait which bears his name, and surveyed portions of the coast of Greenland. It may be well to say here that these and other navigators, Danes, French, and Dutch, were stimulated to energetic efforts for finding a northern passage to India, in great part because Spain, then in her glory and power, monopolized the traffic across the Atlantic and Indian oceans, and dealt summarily with all intruders. The Dutch persevered in their search for a north-east passage. William Barentz made 3 voyages in this direction, 1594-'96. He and his crew suffered much, struggled manfully against difficulties of which they could have had no conception when they set out on their voyages, and for which they were but inadequately prepared; but, so far as the prime object of their expedition was concerned, accomplished nothing material. Barentz himself perished on the 3d voyage, when his crew were in boats near the Icy cape, a headland of Russian America, in the Arctic ocean. We now come to Henry Hudson. He set out in 1607, under the auspices of the Muscovy company. His instructions develop a new trait and phase in arctic explorations. He was ordered to steer directly toward the north pole. He reached lat. 81° 30', steering due north along the coast of Spitzbergen, and returned convinced that a passage across in that direction was impossible of attainment. The following year (1608) he tried the north-east passage, which was then a favorite route with those who believed in the practicability of reaching the Indies by the north. He pushed forward as far as practicable for the ice (about lat. 75°), and returned

the same year. The next year he tried again, but, finding his way impeded by large masses of ice, he returned and sailed westward, and, searching along the American coast for a passage way, discovered the bay of New York and the river which yet bears his name. In 1610 Hudson set sail upon a 4th expedition. He sailed up the strait named after him, into the mouth of Hudson's bay, penetrating several hundred miles further than any one had ever gone before, to the west. The expedition wintered on one of the islands in the mouth of the bay. Their progress in the spring was beset with many difficulties. They met with storms, the provisions gave out, the crew mutinied; and, finally, a portion of the mutineers returned to England, but without Hudson, who perished by the way. It was now supposed that Hudson's bay was a great outlet into the Pacific waters, and sanguine expectations were entertained that here would be found the desiderated north-west passage. Within the next 5 years several expeditions were made into Hudson's bay; and two important channels, Fox channel and Sir Thomas Rowe's Welcome, were partially explored. In 1616 Baffin explored pretty thoroughly the bay called after him, even entering the month of Lancaster sound. Baffin's survey was very exact, and for upward of 50 years after his explorations, no navigator penetrated beyond him. Meantime, however, the Russians were actively exploring in another direction. By overland expeditions through Siberia, and by vessels through Behring's strait, they sought to establish the practicability of a passage to the north-east. It was on one of these expeditions that the extreme variation of the magnetic needle was first closely remarked. Notwithstanding the ill successes of divers expeditions, the Russian government persevered. In 1741 Behring set sail with an expedition from the harbor of St. Peter and St. Paul (Petro-paulovski) in Kamtchatka. The crew suffered greatly on this expedition. After various buffetings before severe gales, having twice made the American coast and been driven off to sea, the commander (Behring) died; the vessels were wrecked; the crews wintered on an island known as Behring's island; built a small vessel the following spring; and finally reached Kamtchatka Aug. 25, the year after they sailed. We have space only to make bare mention of the expeditions in 1760 of Shalafroff, who perished of starvation with all his crew; of Andrejeff; and of Capt. Billings, who started from the mouth of the Kolyma in Siberia. None of these resulted in important additions to the stock of geographical knowledge; and so we come to the last of the Russian efforts—the sledge expeditions of Von Wrangell and Anjon, between the years 1820-'23. These explorers penetrated to lat. 70° 51' N. long. 157° 25' W., and reported an open sea in the distant north, which precluded further operations with sledges. The natives whom they met at various points, spoke of land still

farther north. They did not see it, however. The Russian government seems now to have been unwillingly satisfied of the impracticability of a north-east passage, and the extreme difficulties attending explorations in the ocean to the north of Siberia; sledge navigation being interrupted by large tracts of open water, while naval explorations were rendered yet more impossible by the vast fields of ice which constantly guard the Siberian coasts.—We return now to the British navigators, between whom and the Americans the perils and honors of arctic exploration were henceforth to be divided. Hudson's bay was yet considered a great outlet toward the north-west, and in 1748 the British parliament offered a reward of £20,000 to the crew who should accomplish a passage north-west by way of Hudson's bay. Between 1769-'72 a Mr. Hearne made three overland journeys north toward the Polar sea. In the 8d he discovered and traced to its mouth the Coppermine river. In 1773 Capt. Phipps (Lord Mulgrave) was sent out with instructions to reach the north pole. From this time forth the arctic explorations were no longer merely for purposes of advancing commerce, but in great part for scientific objects, and with the purpose of elucidating various geographical and scientific problems, and satisfying an intelligent curiosity. Phipps, sailing along the shores of Spitzbergen, reached lat. $80^{\circ} 48'$ —not so far north as Hudson, who attained $81^{\circ} 30'$ in 1607. In 1776 Capt. Cook sailed on his last and fatal expedition, with instructions to attempt the Polar sea, by way of Behring's straits. He penetrated only to lat. $70^{\circ} 45'$. From his great experience and success as a navigator ardent expectations were entertained that he would accomplish what no one else had succeeded in. A vessel was despatched to Baffin's bay, there to await him. But in vain. The ice he found to form a solid barrier entirely across his path. Previous to Cook's expedition the conditions of the parliamentary reward had been extended so as to include any northern passage for ships, and an additional reward of £5,000 was offered to the crew that should penetrate to within 1° of the pole. In 1789, Mackenzie, in a land expedition, discovered and traced to its mouth the river called after him, without, however, achieving any other result. The next 2 expeditions set sail in 1818, one under the command of Capt. Ross and Lieut. Parry to discover the north-west passage; the other under Capt. Buchan and Lieut. (Sir John) Franklin, to penetrate to the north pole. Of the last-mentioned expedition the objects were, of course, entirely scientific. The commanders were instructed to pass northward between Spitzbergen and Greenland without stop, and to make every effort to reach the north pole. They found the temperature along the western shore of Spitzbergen unexpectedly mild. But they did not succeed in penetrating further than $84^{\circ} 84'$, and did not get clear of the ice which sur-

rounded them in this latitude without encountering great danger. One of the ships, the *Dorotha*, being much shattered by the ice, the expedition was finally abandoned, and the 2 vessels returned home without accomplishing any material result beyond making some interesting experiments on the elliptical figure of the earth, on the refraction of the air in high latitudes, and on magnetic phenomena.—With the other expedition it was proposed to explore the great openings reported by Baffin to exist at the western extreme of Baffin's bay, and to report fully upon the state of the coasts and waters visited, with the scientific phenomena witnessed. The expedition sailed April 18, 1818. They passed along the Greenland coast; met ice first off Waygat island; saw natives further along, who refused with horror their biscuit and sweetmeats, but drank train-oil; saw, for the first time, red snow; passed Wostenholm sound, looked into Smith's strait, steered south along the western shore past Smith's sound; and finally, Aug. 30, entered Lancaster sound. They were now arrived upon unexplored ground, and the crews first entertained the feelings of discoverers. It was not supposed that Lancaster sound was in point of fact more than a bay, and the vessels were steered into it with many misgivings. After sailing up some 60 miles it was thought that land was discovered, extending completely across from shore to shore of the supposed bay; and, the weather threatening a storm, the vessels were put about. After exploring the coast to the southward and eastward for some distance, the vessels returned to England, where they arrived in October (1818). Capt. Ross reported Lancaster sound to be a bay through which there was no practicable outlet to the ocean beyond. In this opinion several of his officers by no means agreed; and it appears that he failed to convince the scientific public of England of the correctness of his view. Lieut. Parry, who was as positive and sanguine that Lancaster inlet was a sound as was Ross that it was a bay, was intrusted with another expedition wherewith to establish, if possible, the fact. The *Hecla* was his own vessel. The *Griper*, under the command of Lieut. Liddon, was the consort. The expedition numbered 94 men, and was fitted out with provisions for 2 years. The vessels sailed May 11, 1819; first fell in with ice June 18, and found themselves firmly beleaguered on the 25th. They entered Lancaster sound July 30. But it was not till Aug. 8 that both vessels were able to lay their course fairly up the channel. Then they made a rapid run as far as the mouth of Barrow's straits, passing divers islands, bays, and headlands, naming them as they passed, and finally reached the mouth of Prince Regent's inlet. They had now advanced further than any mariners had ever gone before them. They were approaching the magnetic pole, and found their compasses of little use. They entertained the most sanguine hopes of achieving the great ob-

ject of this and other expeditions—a north-west passage. They pushed forward, meeting and overcoming, or avoiding various obstacles, until Sept. 4, when Parry announced to his delighted crew that, having passed the 110th parallel of longitude, they were entitled to the reward of £5,000 offered by parliament for this achievement. On Sept. 20 they were imbedded in ice, and further progress was stopped. They cut their way out and returned to Melville island, where they prepared to spend the winter. Here they made observations, collected specimens, noticed the different animals which constitute the limited *fauna* of that region, and, when the weather permitted, made excursions to different parts of the island, finding—particularly on the western shore—mosses, a dwarf willow, saxifrage, and some small grass in the spring. On June 1 of the following year it was yet very cold. By the 2d week in June the ground was to some extent thawed out, and travelling was rendered difficult. On Aug. 2 the mass of ice which had confined the ships in their harbor broke up and floated out, setting the explorers at liberty. By the 15th they were again imbedded in ice, having made but little advance. Finding their westward progress entirely barred, they finally put about for home, reaching Britain in safety, and with the crews in a healthy condition. So successful a voyage raised high the expectations of all interested, and it was determined to send Parry out again. He accordingly sailed, in command of the *Hecla* and *Fury*, in May, 1821, with instructions to make for Repulse bay, by way of Hudson's straits, with the expectation of thus avoiding much of the ice which had defeated the previous expedition. Before this, however, in September, 1819, an overland expedition was sent out from York Factory, on the western shore of Hudson's bay, with instructions to explore the northern coast of America, from the mouth of the Coppermine, eastward. This expedition consisted of Lieut. Sir John Franklin, Dr. Sir John Richardson, two midshipmen, Messrs. Hood and Back, and a seaman named Hepburn. In the event of Parry's making the coast, on his 1st expedition, the two expeditions were to co-operate. They reached Chipewyan on March 26, having accomplished a foot journey of 856 miles, with the weather so intensely cold that the mercury sank to the bulb of the thermometer and then froze. In July, 1820, they travelled 500 miles more to Fort Enterprise, where the party wintered, while Mr. (Sir George) Back, the midshipman, returned to Fort Chipewyan, to hurry along the supplies necessary for the next season's operations. Mr. Back, after innumerable hardships, returned to Fort Enterprise March 17, 1821, having travelled over 1,100 miles, sometimes two or three days without tasting food, with no covering at night but a blanket and deerskin, and with the thermometer ranging between 47° and 57° below zero. On June 30, 1821, the party, having dragged their

canoes and supplies from Fort Enterprise to the Coppermine, 80 miles, embarked on that stream, and floated seaward. They reached the sea July 18, and immediately commenced paddling to the east. They sailed and paddled along shore 550 miles, and imagined themselves upon the point of emerging into the vast Arctic ocean, when, to their dismay, they discovered that they had just reached the bottom of a huge bay. With but 8 days' provisions remaining, they sadly turned back, Sept. 1, and, unable even to reach their starting point, built 2 small canoes of the larger ones, and ascended Hood river, a short distance west of Point Turnagain, the spot where they gave up further progress eastward. Short of food, in a country deserted even by the few animals which supply the scanty larder of the arctic voyager, ill provided with all that could facilitate their progress, eating the remains of their old shoes and whatever scraps of leather they had, obliged from exhaustion to abandon their canoes when they came to rapids, subsisting, at the last, upon rock tripe and the mosses which they could gather by the way, disappointed in finding assistance at a station where they had expected it, the sufferings of this party were almost unparalleled, and such as but few men could have endured. They lost 2 of their companions, and reached, in July, 1822, York Factory, whence they had started 3 years before. In these 8 years they had accomplished a journey of over 5,500 miles, without accomplishing that which they had set themselves to do, or proving aught but that Christian fortitude and perseverance suffice to overcome even the greatest obstacles. Meantime, Captains Parry and Lyon, in the *Fury* and *Hecla*, made Southampton island, the terminus of Hudson's strait, early in August, 1821, and immediately steered to the north, up Fox's channel. Passing a bay hitherto unknown, which they named after the duke of York, they entered Repulse bay, in the hope of finding here an outlet toward the Arctic ocean. Leaving Repulse bay, they started upon the exploration of a hitherto entirely unknown region. They met with many difficulties, and made slow progress, finding it necessary to explore every indentation of the coast, in the hope of finding somewhere the hoped-for outlet toward the sea. Toward the close of September, the ice began to accumulate, and Parry was obliged to cut into a large floe, and make there a winter harbor for his vessels. The winter was devoted to various scientific experiments. The ships were visited on several occasions by Esquimaux, who, however, could give them no information concerning the country they lived in. It was July before they were once even free of ice, and able to make progress on their voyage. It was near the entrance of Lyon inlet where they had wintered. They made their way to the north, up Fox channel, slowly, against a current setting to the southward, and reached, Aug. 14, the small island of Igloodik, situated at the

entrance of a strait, which they were determined to pass through. This strait, called afterward the strait of the Fury and Hecla, was filled with ice. The ships were long detained, reached the middle of the strait only in September, and were obliged to return to Igloodlik, for the winter, Oct. 30. Another winter (1822-'23) was passed here. The next spring proved unfavorable. The expeditions by land were able to effect but little, on account of the extreme ruggedness of the shore. The first week in August was past before the ships were released from their icy harbor; and Parry, who saw all advance to the north barred, even then, by vast masses of ice, returned home, arriving in England in Oct. 1823. So far but little had been accomplished. But the government was not discouraged, and the explorers seem to have been ever hopeful, and ever ready for new trials and sufferings. Four expeditions were now fitted out. The 1st, consisting of 2 ships, under Parry, was to try Prince Regent's inlet, which it was supposed would be found to open at its southern extreme, into that great open Arctic sea, of which so much was hoped. The 2d party, under the command of Franklin, was to descend the Mackenzie river to the sea, and there divide, one party turning to the east, the other endeavoring to penetrate westward, even to Behring's straits. Captain Beechey, in the Blossom, was despatched around Cape Horn, to sail through Behring's straits and make headway to the east as far as Kotzebue sound, where he was to wait for Franklin's overland party. The 4th expedition (Capt. Lyon, in the Griper) was to pass to the south of Southampton island up Sir Thomas Rowe's Welcome, to Repulse bay; then to cross the Melville isthmus, and survey the coast as far as Franklin's Point Turnagain. This expedition was unfortunate; the vessel was twice nearly wrecked, and the expedition was abandoned when yet 80 miles distant from Repulse bay. Parry's expedition sailed in May, 1824, entered Lancaster sound in September, got into the ice, and was obliged to winter in Port Bowen, near the entrance of the sound. The following July, when starting forward again, the Fury was wrecked, and Parry returned to England in the Hecla, with a double crew. The only object gained by this disastrous expedition was a contrivance whereby the compass was made to work perfectly under all circumstances, and in all places, no matter how near the magnetic pole, thus obviating a most serious difficulty in arctic navigation. This was accomplished by simply placing a small circular plate of iron near the compass.—We come now to Franklin's expedition. The officers forming his staff were Dr. Richardson, Lieut. Back, Mr. Kendall, and Mr. T. Drummond, a naturalist. They arrived at Fort Chipewyan in July, 1825; passed on to Great Bear lake, where the party were to winter; and thence a small party with Franklin descended the Mackenzie to the sea, which they reached at a point in lat. 69°

14', long. 135° 57', 1,045 miles from Great Slave lake. Here, on an eminence overlooking the Arctic ocean, Franklin had the mournful privilege of unfurling to the cold breeze a banner presented to him by his wife for this purpose, as she lay on her death-bed but a few days before his departure. She died the day after he left England. On June 28, 1826, the whole party again started from their quarters, down the Mackenzie. The expedition separated, according to the previously planned course of operations. Franklin, going to the westward, reached the sea, and penetrated as far west as Return Reef, in lat. 70° 24', and long. 149° 37' W., whence, on Aug. 18, he set out on his return for the Mackenzie, the weather turning bad, and he being unaware that Beechey was waiting for him but 146 miles to the westward. The latter, in the Blossom, had passed through Behring's strait and anchored near Chamisso island, in Kotzebue sound, on July 22. He waited here till the season advancing made further stay dangerous; and then sailed for Petropaulovski. The following year (1827) he again anchored in Kotzebue sound, but of course did not meet Franklin's party as he had hoped. Franklin traced the coast for 374 miles from the mouth of the Mackenzie. His voyage extended over 2,000 miles. The other party (under Dr. Richardson) accomplished but little, sailing along an uninteresting shore. The whole expedition wintered at Great Bear lake, where Franklin instituted a series of observations on terrestrial magnetism. As his winter quarters lay on the opposite side of the magnetic pole from Parry's, who made similar observations, it follows, to quote the words of Franklin, that "for the same months, at the interval of only one year, Capt. Parry and myself were making hourly observations on 2 needles, the north ends of which pointed almost directly toward each other, though our actual distance did not exceed 855 geographical miles; and while the needle of Port Bowen was increasing its westerly direction, ours was increasing its easterly, and the contrary—the variation being west at Port Bowen, and east at Fort Franklin—a beautiful and satisfactory proof of the solar influence on the daily variation."—We now come again to an expedition whose object was to reach the north pole. In 1806 Mr. Scoresby, a whaleman and private discoverer, had penetrated as far as 81° 30' north, further than any one had gone before him. Buchan and Franklin so completely failed in the ship expedition in 1818, that Mr. Scoresby was led to advise an expedition to proceed by boats so fixed on sledges as to be easily dragged over the ice. Capt. Parry received the command of an expedition fitted out in accordance with this idea. Two boats, covered, well built, and set upon sledges, were to be landed upon the northern shores of Spitzbergen, whence they were to be dragged or sailed as ice or water presented itself. It was June 30, 1827, before Parry started with his boats, which con-

tained 71 days' provisions. They met with many difficulties from the outset—thin ice, rough ice, short tracts of water interspersed with shorter tracts of ice; and snow-blindness among the crews. The last evil they obviated by travelling altogether at night, completely reversing the usual order of living, and for many days sleeping regularly by day and pushing forward by night. So slow was their progress that in 5 days of unremitting exertions, from June 24 to 29, they made but 10 miles due north. Setting out with the hope of reaching the pole, they finally willingly compromised on the 83d degree. Even this they were not destined to reach. The ice on which they travelled moved, to the south, in a body, about as fast as they could move northward, and, on reaching 83° 45', they gave up. They were then by observation distant from the Hecla 172 miles. To attain this distance they had actually passed over 293 miles of ice and water; and having to make several of their days' journeys over 3 or 4 times on account of the moving ice, it was calculated that they really travelled 668 miles. They got back from this most discouraging and laborious expedition Aug. 31, thus signally failing in the only attempt ever made to reach the pole by going direct over the icy barrier which guards it, a project which bore upon its face more likelihood of success than any other ever devised for the same object.—We come next to an expedition fitted out by Sir Felix Booth, and commanded by Capt. Ross and his nephew, Commander (Sir James) Ross, in the *Victory*, a vessel fitted to use steam in calm weather. The object was to find a north-west passage by some opening leading out of Prince Regent's inlet. The *Victory* sailed in May, 1839; entered Prince Regent's inlet Aug. 9; made the scene of the *Fury's* wreck on the 12th; and, on the 15th, reached the furthest point achieved by Parry, whose explorations it was intended to follow up. They now met with many difficulties from the ice. Amid these, during the months of August and September, they worked their way along 800 miles of hitherto undiscovered coast, and finally reached a point only about 200 miles distant from the extreme point reached by Franklin on his last expedition from the westward. As the shore here suddenly trended to the westward, the voyagers now entertained strong hopes that the intervening 200 miles would be navigable at some future time. The season, however, was now over, and Oct. 7 they got into winter quarters at a place they named Felix harbor. Sept. 17, 1830, they once more got under way. After making 8 miles, they again entered winter quarters, where they remained till Aug. 28, 1831. After making 4 miles (which consumed a month's time) they again, Sept. 27, got into winter quarters. It was during April, 1831, that Capt. Ross, on a sledging expedition, for the first time reached and fixed the position of the true magnetic pole. The spot was in lat. 70° 5' 17", and long. 96° 46' 45" W. The scurvy

appearing among the crew, it was finally deemed best to abandon the ship, and with the boats on sledges to make for the place of the *Fury's* former wreck. After almost incredible hardships and sufferings, they reached this spot July 1, 1832, having left their ship April 23. Here, on *Fury* beach, they were obliged to pass another winter—1832-'33. The crews suffered much. Several died, and many others were sick. They started again for the open sea July 8, 1833, and Aug. 26 despatched a vessel, which took them on board. The captain refused at first to believe that Captain Ross and his crew stood before him. They had been given up for dead, for 2 years past. On Sept. 30, 1833, they reached the Orkneys, having been absent since May, 1839. In Feb. 1833, Back, with Dr. King, a naturalist and surgeon, left England for an overland expedition in search of Ross's party. They reached Fort Resolution, on the Great Bear lake, August 8. They passed on to Muskox lake, to the north and east, but returned to winter at Fort Reliance, where they suffered terribly from scarcity of food, and a temperature which brought the thermometer to 102° below the freezing point. Back says, "On one occasion, while washing my face *within three feet of the fire*, my hair was actually clotted with ice before I had time to dry it." On April 25, when they were preparing to start for the sea-coast to the north and east, they received news of the safety of Ross and his party. On June 28 they launched their boats on the Thlew-ee-choh river, which, they hoped, would take them to the Polar sea. After a most difficult navigation of 530 miles, they finally, July 29, reached the ocean, at lat. 67° 11' N. and long. 94° 30' W., about 37 miles south of the mouth of the Coppermine. Its whole course ran through a country without a single tree—"an iron-ribbed country," Back calls it, "desolate, but abounding in game." They now pushed on along shore, but met with constant impediments, and were finally, Aug. 14, obliged to turn back. The extreme point they reached was in lat. 68° 13' N. and long. 94° 58' W. The entire line of coast was level, and devoid of vegetation. They arrived at Fort Reliance Sept. 17, having been nearly 4 months away, and having travelled over a large tract of country before unexplored; but without having accomplished any thing of importance toward the elucidation of the great problem of the possibility of a north-west passage. Back returned to England in Sept. 1835, and in June, 1836, set out in the *Terror*, to complete the exploration of the supposed water connection between Ross's winter harbor, in Prince Regent's inlet, and the Point Turnagain, which Ross had so vainly attempted to reach. They were unfortunate from the first, and accomplished nothing. Simultaneously with this expedition, the Hudson Bay company sent out 3 men, Dease and Simpson, to descend the Mackenzie river to the sea, and follow the coast to

the west, as far as the point from which Beechey turned back to go out of Behring's strait. This would complete the survey of all that part of the American shores. They reached Return Reef, Franklin's furthest point (Aug. 1826), in July, 1837. Beyond this no one had ever been. They reached Point Barrow, the extreme point attained by Beechey in 1826, August 4, and thus completed their task. They discovered on the way two large rivers, which they called the Garry and the Colville. Returning to winter quarters on Great Bear lake, they started on another expedition, to explore to the eastward, in June, 1838. They reached the coast by way of the Coppermine. Finding their progress stopped by the ice, a portion of the party set out to the eastward, on an overland expedition. Passing Franklin's Point Turnagain, the furthest point hitherto reached from the west, they discovered an ice-encumbered strait (Dease's strait), and at its eastern extremity a large headland. To the north lay an extensive tract of land, now first seen, and which they called Victoria land. Surmounting the ice-bound cape, the explorers, to their surprise, found the sea beyond entirely free of ice; Victoria land stretching for 40 miles to the E. N. E., and the American coast trending to the S. E. This was the limit of their explorations in 1838. In an expedition the following year, they sailed through Dease's strait, and not only settled the coast line, up to the spot which Back had reached in 1834, but went beyond, and ascertained that the estuary of Back, into which they sailed, separates Boothia on the west from the American continent. In fact, they joined their discoveries very nearly to those of Ross, and were at one time within 90 miles of the place he fixed upon as the locality, during that year, of the magnetic pole. The entire American coast, along the Polar sea, was now explored, except that portion lying between Dease and Simpson's extreme point on the west of Boothia, and Ross's winter quarters on the east side of the same land; and that tract lying between Ross's winter quarters and the extreme point reached by Parry in 1822, at the entrance of the strait of the Fury and Hecla. The main question now was on the possibility of passing with ships between Boothia and the American mainland, as, if this were possible, the passage down Prince Regent's channel would be the easiest one, for the accomplishment of a passage to the north-west. To settle this question, an all-important one in its bearings upon future explorations, the Hudson Bay company, in 1846, sent out Dr. John Rae. He and his party reached Chesterfield inlet July 13, 1846, passed Repulse bay safely, and conveyed their boats thence into the gulf of Akolee. Wintering, however, at Repulse bay, the result asked for, from their expedition, was not attained till 1847. On April 5 of that year they started again into the gulf of Akolee. On the 18th they reached an inlet which Sir John

Ross had before discovered, in one of his land excursions, during his 2 winters' sojourn on the coast of Boothia, and (Ross having established the continuity of the coast to that point) thus proved that Boothia is connected with the American mainland, and that, consequently, there is no outlet toward the west, through Prince Regent's inlet, and thus was destroyed the most plausible of all the suggested passages to the north-west—that which bade fair to be most generally open and practicable. Returning to recruit, May 12, Dr. Rae set out to explore the eastern shore of the gulf of Akolee, and connect his surveys, if possible, with those of Parry (1822) in the Fury and Hecla strait. On May 27, the party reached a point from which, during an interlude in the storm, they saw a headland, which Rae calls Cape Ellice, and computes to be in lat. $69^{\circ} 43' N.$ and long. $85^{\circ} 8' W.$, that is to say, within 10 miles of the Fury and Hecla strait. This completes the entire survey, with the exception of Fury and Hecla strait itself, and thus was finished, with this exception, a geographical exploration of the northern coast of the entire American continent, on May 27, 1847. —We come now to the last voyage of Sir John Franklin. The discovery of a north-west passage was no longer a dream of the merchants. As a road to the Indies, this passage had been for some time given up, but the world of science anxiously demanded further and more complete explorations, mainly to establish the disputed separation of the American continent from the land to the north. There were enough men found, brave, hardy, and adventurous, to meet the wishes of the men of science. The achievement of a north-west passage was a life-dream of Franklin, and to him was intrusted the new, and—so it was hoped—final expedition. The *Erebus* and the *Terror*, long tried in arctic navigation, were the vessels chosen for the voyage. Each was fitted with a small steam engine, and screw propeller to work in calms and head winds, and narrow ice gorges. Sir John Franklin commanded the *Erebus*, Captain Richard Crozier the *Terror*. The crews amounted to 188 men. The vessels sailed May 19, 1845, in company with a tender, with additional stores. This tender was relieved and sent home, in Davis's straits, where the vessels were fully provisioned and equipped for a 3 years' stay. On July 6, 1845, they were seen by a whaleship, in lat. $74^{\circ} 48'$, and long. $66^{\circ} 18'$, about the centre of Baffin's bay, moored to an iceberg, and waiting an opening into Lancaster sound. This is the last time the vessels were ever seen, and from this time arctic explorations were conducted with a main view to relieving Franklin's expedition, or discovering its remains. Franklin's expedition was very completely equipped in all respects, and no pains nor expense were spared to provide against any and all conceivable accidents in the regions of ceaseless ice. The instructions of the admiralty directed Franklin,

after sending home the transport from Davis's straits, to make the best of his way to Baffin's bay, and through this into Lancaster sound. Lancaster sound, Barrow's strait, and the passage to Melville island the admiralty thought likely to be clear of ice, and Franklin was therefore instructed to "push westward, without loss of time, in about lat. $74^{\circ} 15'$, till you have reached the longitude of that portion of land on which Cape Walker is situated (North Somerset), or about 98° W. From that point we desire that every effort be used to endeavor to penetrate to the southward and westward in a course as direct toward Behring's straits, as the position and extent of the ice, or the existence of land, at present unknown, may admit." Beyond this, Franklin was given authority to act as unforeseen emergencies should dictate. He sailed, as before said, in May, 1845. Toward the close of 1847, nothing having been heard of the expedition, alarm began to be felt as to its safety, and early the following year (1848), 8 different expeditions for succor were despatched by the British government. The first of these, in the Plover, Commander Thos. Moore, and the Herald, Capt. Kellett, was to enter Behring's strait, and advance at least as far as Chamisso island, in Kotzebue sound, and then to examine the coast further to the eastward in boats. The expedition was joined by the Nancy Dawson, a pleasure yacht, owned and commanded by Mr. Robert Shedden, who took a very active part in all the operations. The vessels reached Chamisso island July 14, 1849, proceeded immediately on to Icy point, and thence sent the boat expedition on to explore, if possible, as far as the Mackenzie river. The vessels meantime stood to the north, until, in lat. $72^{\circ} 51'$ and long. $168^{\circ} 48'$, they were brought to by densely packed ice. Still exploring, on Aug. 17 they discovered land, some islands, and a greater body of land, in about lat. $71^{\circ} 80'$, and long. 175° W. On Aug. 24, part of the boat expedition rejoined the vessels, the remainder, 2 whale boats, having been despatched, according to previous instructions, up the Mackenzie river, to proceed homeward by way of Fort Hope and York Factory. The returned boats had explored the shore as far as Dease's inlet, but had found no traces of the lost voyagers. The following summer (1850), the 2 vessels reexplored the same ground, but again without meeting with any traces of Franklin. The Plover, Capt. Kellett, was left to winter in Grantley harbor, and the Herald returned home. Meantime, part of the land party, under Sir John Richardson, reached the Polar sea, Aug. 4, 1847, making deposits of pemmican by the way, at convenient points, along Mackenzie river. They then explored the shore to the east for 800 miles, to the mouth of the Coppermine. They found no traces of Sir John Franklin. The next summer, 1849, Sir John Richardson having returned to England, Dr. Rae explored the shores of Wollaston sound, and in 1850 he repeated his explora-

tions, but with like non-success. The 8d expedition, that under command of Sir James Ross, sailed from England May 12, 1848, explored the south side of Lancaster sound, as far as Cape York, and thence across the mouth of Prince Regent's inlet, wintered at Leopold harbor, and the following spring (1849) explored the shores of North Somerset as far as lat. $72^{\circ} 38'$ and long. $95^{\circ} 40'$ W., discovering what was not certainly known before, that North Somerset and Boothia were united by a narrow isthmus. They explored, also, portions of the shore north of Barrow's straits, and both sides of Prince Regent's inlet, establishing the partly consolatory fact that Franklin's party had not been lingering anywhere within their reach the past winter. The expedition returned to Britain Nov. 8, 1849, without having fallen upon any traces of Franklin. The non-success of all these expeditions caused immediate and renewed efforts to be made. The general opinion of those best acquainted with arctic navigation, and with Sir John Franklin, was that his party was ice-bound among the islands to the westward of Melville island. Thither, therefore, were the next efforts mainly to be directed. In March, 1849, the British government gave notice that £20,000 would be awarded to any private exploring party, of any country, which should render efficient aid to the missing explorers. In 1849 Lady Franklin had a supply of coals and provisions landed upon Cape Hay, south side of Lancaster sound. In 1850 8 new expeditions were sent out by the British government, with instructions mainly identical with those of 1848. The year 1850 was, however, to see many more expeditions than these 8 of the government. In fact, there were in all no less than 8. We will mention them all, with the portion of the general object intended to be accomplished by each. First on the list comes the continuation of Dr. Rae's expedition of 1849. He was to penetrate further to the north than he had been able to do before; and to examine the shores of Bank's island, the coast about Cape Walker, and the north side of Victoria land. Two smaller parties were at the same time to follow the mainland to the westward, toward Point Barrow, one descending the Mackenzie, the other the Colville.—Next comes the Behring's strait expedition, consisting of the Enterprise, Capt. Collinson, and the Investigator, Commander McClure. They were instructed to cruise in company as far to the eastward as they could get; to make friends of the Esquimaux; to make occasional deposits of provisions; and to prevent, by every means, any detention of the vessels in the ice. The Investigator and Plover (the last already in the Pacific) were last in getting through Behring's strait. The commanders of these two vessels having provisions sufficient to last till 1854 (from 1850), determined to push on resolutely, and explore as far as they possibly could; and here we must leave them.—Next comes the government Baffin's bay expedition, consisting

of the *Resolute*, Capt. Austin, and the *Assistance*, Capt. Ommaney—sailing vessels—and the *Pioneer* and *Intrepid*, Capt. Sherrard Osborne, both screw propeller steamers. The instructions to this expedition were mainly of a similar tenor to those given the Behring's strait commanders. This fleet sailed in the spring of 1850. The schooner *Felix*, and a small tender, the *Mary*, formed an expedition put forward by public subscription, and commanded by Sir John Ross. He sailed in April, 1850, provisioned for 18 months, and designing to commence at Cape Hotham, at the west side of the entrance of Wellington channel, and examine all the headlands to Bank's land. Finding nothing, he then intended to leave his tender and push forward for a second season in the *Felix*. The *Lady Franklin*, fitted out by Lady Franklin, and commanded by Capt. Penny, with the brig *Sophia*, sailed also in 1850, intending to explore as circumstances should seem to direct, but having a general plan somewhat similar to the government expedition.—Lady Franklin also fitted out and defrayed two-thirds of the expense of another expedition, consisting of the schooner *Prince Albert*, commanded by Commander Charles Forsyth and Mr. W. P. Snow, both volunteers. Their object was to examine the shores of Prince Regent's inlet and the gulf of Boothia, and to send out overland travelling parties to explore the western side of Boothia, down to Dease and Simpson's strait. The *Albert* sailed in June, 1850.—The *Advance* and *Rescue*, under the command of Lieut. De Haven, formed an American expedition, fitted out by the United States government, but at the cost chiefly of Henry Grinnell, Esq., of New York. This expedition left New York May 24, 1850. Its plan was to push forward, without delay, toward Bank's land and Melville island, and generally to make the best use of every opportunity for exploring in that direction.—Lastly comes the *North Star*, a transport ship, containing stores for the expedition of Sir James Ross. She wintered at the head of Wostenholme sound, in lat. $76^{\circ} 38'$, the furthest north any vessel ever wintered except Dr. Kane's, and returned to England in Sept. 1850.—It will be seen that there were now no less than 11 vessels, exclusive of the *North Star*, on the eastern arctic waters. Capt. Ommaney of the *Assistance*, came upon the first traces of the missing mariners, at Cape Riley, Aug. 23, 1850. A more minute examination of the country immediately surrounding gave indisputable proof that Franklin's party had sojourned about there for some time. The site of a tent, paved with small stones; quantities of birds' bones lying around; as also meat canisters, were the traces discovered at Cape Riley. At Beechey island, about 8 miles west of the cape, and just at the entrance of Wellington channel, Lieut. Osborne finally came upon the encampment of the party—in fact the first winter quarters of Sir John Franklin. The objects here discovered were a large number of empty

preserved meat tins, the embankment of a house, with carpenters and armorers' working places, and other remains of a large establishment; and finally, the graves of 8 men belonging to the *Erebus* and *Terror*, which bore date of the winter of 1845-'6. Further on, on the island, there were the remains of a garden, and various articles of apparel lying about. Lieut. De Haven, of the American expedition, visited the place on Aug. 25, and made another thorough search. The officers of the *Prince Albert*, as well as Capt. Penny, also examined the entire ground very minutely. Singularly, not all this searching brought to light any document which could give the slightest trace of the future intentions of the party. Taking for granted the fact that there was nothing of the kind left, it is only to be supposed that they had so far met with no extraordinary perils, and departed from the island in a very sanguine frame of mind, little thinking of the terrible fate which was but just coming upon them. The belief of those having the greatest experience and the best judgment, is, that the lost party were detained at Beechey island till late in the season (1846), and that, on account of some sudden movement in the blockading ice, they departed suddenly. The government ships wintered but little distance from each other; and the spring of 1851 was devoted to land expeditions, in which the shores of Wellington channel, the coast of Bank's land, and the waters leading from Barrow's strait to Melville island, were to be thoroughly explored. The various parties made a thorough search on their different routes, discovered 675 miles of hitherto unknown coast, but found no trace of the lost. Lieut. McClintock's party reached on this occasion the furthest western limit ever attained by arctic explorers, starting from Baffin's bay, a point in long. $114^{\circ} 30' W.$ and lat. $74^{\circ} 38'$. From the wondrous tameness of animals found hereabouts it would seem that few if any human beings had ever touched this point before.—The conclusion deduced from the failure of all efforts in these directions to obtain traces of Sir John Franklin, was that he had not gone to the southward and westward of Wellington strait, as had been hitherto taken for granted. A discovery by Capt. Penny of a hitherto unknown channel, opening northward from Wellington channel, corroborated the above conclusion; although neither here were traces found of the party. The newly discovered strait was called Victoria channel.—Dr. Kane's opinion, on examining the sledge tracts about Cape Riley, was that Sir John Franklin had passed to the north, with his ships, on the breaking up of the ice in 1846; had gone through Wellington channel into the supposed Great Polar basin, and had never returned.—The American expedition, which had gallantly led the way, wherever they could go, and whose commander earned for himself at the hands of the English the sobriquet of "the mad Yankee," after undergoing much suffering and considerable danger, arrived in New

York, the *Advance* on Sept. 30, and the *Rescue* on Oct. 8, 1851. On June 8, 1851, the *Prince Albert*, which had brought to England news of the discovery at Beechey island, was dispatched by Lady Franklin on another expedition to explore the shores of Prince Regent's inlet. She returned in Oct. 1853. The only incident bearing even remotely upon the search, was that at a point between Fury beach and Cape Walker, a land party came upon a cairn and a depot of provisions left by a party under Capt. Austin. The ground being deeply covered with snow, Capt. Kennedy actually took the cairn to be part of the cliff upon which it stood; and walked over the provision depot without noticing its presence—a circumstance which would seem to point to the supposition that Franklin's signals and traces might have been passed over in the same way. The final and firm conclusion drawn from the final non-success of all the expeditions, including Dr. Rae's, of 1851, which was very thorough, was, that Franklin had never reached so far south as the American mainland, or the peninsulas connected with it. Sir John Ross had brought back a report that the Franklin party had been murdered in Wostenholm sound, by the Esquimaux. To establish the truth or falsity of this rumor, Lady Franklin sent the *Isabel* screw steamer, Commander Inglefield, to explore this sound. He left England in July, 1852, examined Wostenholm sound—finding no traces of the missing ones—sailed up Smith's sound to lat. $78^{\circ} 28' 21''$ —140 miles further than previous navigators had reached—found, as he thought, a more genial climate than existed to the south, and established, in this voyage, the presence of a strait or channel connecting Baffin's bay with the great Polar basin. Meantime, in obedience to the Wellington channel theory, Sir Edward Belcher was sent out in April, 1852, in command of 5 vessels, the *Assistance*, *Resolute*, *North Star*, *Pioneer*, and *Intrepid*—the last 2, steamers. The *North Star* was to be the depot and store-ship, the *Resolute* and *Intrepid* were to steer west, to the assistance of Collinson and McClure. The *Assistance* and *Pioneer* were to push up Wellington channel. In the spring of 1853, more expeditions were sent out. The chief of these was that fitted out by Mr. Grinnell of New York, Mr. Peabody of London, and others, and commanded by Dr. E. K. Kane, who had acted as surgeon, naturalist, and historian of the former Grinnell expedition, under De Haven. Lady Franklin sent out the *Rattlesnake*, and *Isabel*, steamer, for Behring's strait, to assist Collinson and McClure. Dr. Rae was despatched for another exploration of Boothia. And, finally, the *Lady Franklin* and *Phoenix*, Capt. Inglefield, were sent to Barrow's straits, to aid Sir Edward Belcher. With Inglefield on this expedition was Belot, a gallant young Frenchman, who was lost Aug. 18, 1853, by being blown off some floating ice.—The westward expedition of Belcher made a number of explorations in the general direction of their line of search, toward Mal-

ville island. They found no traces of Franklin; but fortunately succeeded in finding and rescuing McClure and his ship's company, who had been buried in the arctic ice since the summer of 1850—3 long years. These returned home with Belcher, abandoning their ship; and are thus the first and only ship's company who ever entered Behring's strait and returned to Europe by Baffin's bay. Thus was established, at last, the great fact that there was a continuous passage by water from Baffin's bay to Behring's strait, parallel with the coast of the American continent. McClure reached, in his ship in 1850, within 60 miles of the western terminus of Barrow's strait, and thus had nearly passed through with his vessel. The crews under Belcher's command had meantime made extensive explorations by land during the spring and autumn of 1853, and the spring of 1854. The *Assistance* and *Pioneer* penetrated up Wellington channel to lat. $78^{\circ} 10'$, making various discoveries of new land and islands. When the vessels were brought to by ice, the officers set out on sledges, and penetrated overland to a point which Belcher considered an opening into Jones' channel, from the east. Here, to their surprise, as early as May 20, all sledging operations were stopped by open water. They found at various points structures of ice, too well built to be the work of natives; but nowhere the slightest tangible trace of Sir John Franklin. In the spring of 1854, the vessels composing the expedition, the *Assistance*, *Resolute*, *Pioneer*, *Intrepid*, and McClure's ship, the *Investigator*, were abandoned, their crews taken on board the *North Star*, *Phoenix*, and *Talbot*, and the entire party arrived in England in Sept. 1854. It must be mentioned here, that McClure, in Aug. 1850, discovered in the ear of an Esquimaux chief, near the mouth of Mackenzie river, a flat brass button. On being asked where he obtained this, the chief made answer that it had been taken from the ear of a white man who had been killed by one of his tribe. The white man belonged to a party which had landed at Point Warren (near the mouth of the Mackenzie), and there built a house. Nobody knew how they came, as they had no boat. But they went inland. The man killed had strayed from the party, and he (the chief) and his son had buried him on a hill at a little distance. When, or the exact spot where this occurred, could not be ascertained. Neither the grave nor the house was found. Collinson, McClure's companion on the Behring's strait expedition, eventually returned to England by the way he came. He made numerous discoveries of land, and explorations, in the neighborhood of Bank's land, Wollaston land, Albert land, and Victoria land; at Cambridge bay in Wollaston sound, in about lat. 70° and long. 117° , when his vessel passed the winter of 1852-'3, he saw in the possession of the Esquimaux a piece of iron and fragments of a hatchframe or doorway. These he thought must have belonged to Franklin's ships. But he was unable to obtain any intelli-

gence in regard to the manner in which the Esquimaux came into possession of them. This was the only trace of Franklin with which he met. There remained now only Dr. Rae's expedition to Boothia, and Dr. Kane's American expedition to hear from. Dr. Rae reached Pelly bay, at the southern termination or bottom of Prince Regent's inlet, in April, 1854. Here he met Esquimaux who had in their possession various articles of silverware, &c., belonging to various officers of both the *Erebus* and *Terror*. The intelligence obtained by him of the natives may be summed up as follows: In the spring of 1850, some Esquimaux killing seals near the north shore of a large island known as King William's land (some distance westward of Pelly bay), saw a party of about 40 white men pass to the southward, along the western shore of this island. They were dragging a boat and sledges with them. They could not speak Esquimaux, but the natives gathered that their ships had been crushed, and they were now going where they could find deer to shoot. They purchased a little provision from the natives, who judged that they were nearly destitute of food. The officer with them was described as a tall, stout, middle-aged man. At a later date, the same season, but previous to the disruption of the ice, the corpses of some 30 persons, and some graves, were discovered on the continent, and 5 dead bodies on an island near it, about a long day's journey north-west of the mouth of a large river supposed to be Back's river. Of the bodies on the island, one was supposed to be a chief, as he had a telescope slung about his neck. These men, from all appearances, had been driven to cannibalism before they perished. From the fact that shots were heard, and the feathers of wild fowl were found near the bodies, it is conjectured that a few of the men survived till May, 1851. They seem to have had an abundance of ammunition. There were, also, numbers of telescopes, guns, watches, &c., pieces of which articles were found among the natives by Dr. Rae, in considerable quantities. Dr. Rae's opinion was that the party died by starvation, and not by the hands of the natives. Mr. Jas. Anderson was sent out in 1855, to explore more perfectly the spot designated as the scene of so much suffering. On June 30, a little way from the mouth of Back river, he came upon some Esquimaux, who had with them numerous articles belonging to a boat equipage. The natives stated that the owners of these articles had died of starvation. On reaching Montreal island, where the 5 men had perished, according to report, Mr. Anderson found chain-hooks, tools, rope, bunting, and a number of sticks strung together, on one of which was carved the name of Mr. Stanley, surgeon of the *Erebus*. On a plank was found the word "Terror." Not a vestige of the remains, nor any paper, was found. At Point Ogle some small articles were also found, but no bodies. The party were unable to reach King William's land, the scene of the chief disaster.—With the

account of Dr. Kane's explorations at the head of Smith's strait, closes the history of arctic exploration and adventure. Dr. Kane sailed in the *Advance* from New York, May 30, 1858. The discoveries of Inglefield in Smith's strait, and those of Belcher at the head of Wellington channel, had produced in his mind the conviction that there was somewhere between the 80th degree of north latitude and the north pole, a vast open sea, and a milder climate than was found some degrees to the south; and further, that in this sea were to be sought, and he hoped found, tidings of Sir John Franklin's long absent expedition. His determination was, therefore, to penetrate as far up Smith's strait as possible, in the hope of being able to enter the Polar sea, and there have clear water, for his explorations. He entered the ice Aug. 2, and on the 20th found shelter from a hurricane under lee of a rocky island, which he named Godsend ledge. Leaving his men, on the subsidence of the gale, to tow the vessel along the ice, Dr. Kane, Aug. 29, passed ahead, with a boating party, to explore the coast. He thus passed numerous points of land, and reached Cape George Russell, whence he saw the great glacier of Humboldt, with Cape Jackson on one side, Cape Barrow on the other, and a sea of solid ice between. Not finding, on this trip, a good place for winter quarters, he returned, and the *Advance* was moored for the winter in Van Rensselaer harbor, in lat. $78^{\circ} 37'$ and long. $70^{\circ} 40'$. During the continuance of daylight in the autumn, excursions were made into the interior of Greenland, in which over 800 miles were traversed, and the coast was traced for 135 miles to the north and east. During this winter the thermometer fell to 99 degrees below zero. Their winter harbor is further north than that of any other expedition whatever, and nowhere else but at Spitzbergen are Christians known to have passed a winter so near the pole. With March they were again cheered by the sun. But the crew were much enfeebled by the long winter. It was not till April that Kane started on his chief sledging tour to the north, in which he hoped to "attain the *ultima thule* of the Greenland shore, measure the waste that lay between it and the unknown west, and seek round the furthest circle of the ice for an outlet to the mysterious channels beyond." Owing to the severity of the climate and great obstacles, the expedition failed in its main object. But they discovered on this trip some remarkable natural features: the Three Brother Turrets, Tennyson's Monument, and the Great Glacier of Humboldt. They returned to the vessels May 14. Dr. Hayes and William Godfrey started on another expedition May 30. They crossed Smith's strait, and attained to lat. $79^{\circ} 45'$ and long. $69^{\circ} 13'$. They saw, 30 miles ahead, 2 capes which they named Capes Joseph Leidy and John Frazer. On June 30, Messrs. McGary and Bonsall left on a 3d expedition, Kane being yet ill. They reached Humboldt glacier on the 15th. Four of the party returned

on the 24th, entirely blind. Two pushed on, and on June 21 saw open water to the north, called by them Kennedy channel. They penetrated as far as Cape Constitution, in Washington land, lat. $82^{\circ} 27'$. The open channel abounded with animal life, such as bears, birds, and seals. The results of this excursion prove that Smith's strait in fact opens into Kennedy channel, and this opens into a great open polar sea, abounding with life. The shores of Kennedy channel and Smith's strait had been explored for 760 miles. Mr. Morton returned to the ship on July 10. Dr. Kane, seeing no probability of the release of his vessels during this summer, determined to communicate with Belcher's expedition. Failing in this, it was determined that part of the crew should abandon the vessel. The party, however, returned after a few days, and the crew were now beset for another winter. During this winter it was resolved to abandon the brig in early spring, and make for the Danish settlements at the south. On May 17 they left in boats and sledges, and after much privation and many narrow escapes, reached Upernavik Aug. 9, in 84 days from the time of leaving the *Advance*. Fears for Kane's safety had induced the United States navy department to send out, in the spring of 1855, 2 vessels, the *Release* and the steamer *Arctic*, to the relief of the missing brig's crew. Capt. Hartstene, who commanded this expedition, reached lat. $78^{\circ} 32'$ and then found his onward progress stopped by a firm barrier of ice. Returning, he found Kane and his crew at Upernavik, and returned with them to the United States, in the fall of 1855. In a scientific point of view, Dr. Kane's expedition attained the most important results of any arctic expedition whatever. These results cannot be more concisely or clearly summed up than is done by himself in his report to the navy department of the United States, as follows:

1. The survey and delineation of the north coast of Greenland to its termination by a great glacier.
2. The survey of this glacial mass, and its extension northward into the new land named Washington.
3. The discovery of a large channel to the north-west, free from ice, and leading into an open and expanding area, equally free. The whole embraces an iceless area of 4,200 miles.
4. The discovery and delineation of a large tract of land, forming the extension northward of the American continent.
5. The completed survey of the American coast to the south and west, as far as Cape Sabine; thus connecting our survey with the last determined position of Captain Inglefield, and completing the circuit of the straits and bay heretofore known at their southernmost opening as Smith's sound.

The *Resolute*, one of Sir E. Belcher's expedition, was, as before mentioned, abandoned May 15, 1854, not far from Beechey island. On Sept. 15, 1855, she was discovered by Captain Budington, of the *George Henry*, whaleship, of New London, off the west shore of Baffin's bay, in lat. $67^{\circ} N$. The vessel was encumbered with ice, but was perfectly tight and seaworthy. The distance between the place where she was abandoned, and that where she was retaken, was at least 1,200 miles. She was brought to New London, purchased by the U. S. govern-

ment by order of congress, thoroughly refitted, and presented to Queen Victoria and the British government, in December, 1856. The British government took possession of her, and had her stripped and laid up in ordinary in Woolwich dockyard.

ARCTURUS, formerly a constellation near the Great Bear, whence its name, *arctosourpos*, the bear's guard (or *oupa*, tail). Later the name was confined to the largest star in the constellation, which was afterward called Bootes. It is a star of the first magnitude, and was at one time erroneously believed to be the star nearest to our system.

AROUATION (Lat. *arcus*, a bow), a term used to designate a method of propagating trees. The shoots sprouting from the stools or stems of the trees cut off near the ground, are bent over, and a portion of them is covered with earth; the shoots take root, and thus the tree is propagated. The term is, however, now obsolete.

AROUËIL, a small village of France, $3\frac{1}{2}$ miles S. from Paris, on the Bièvre. It is celebrated for an aqueduct constructed there by the Roman emperor Julian during his abode in Paris, to convey water from the Bièvre to his palace. Remains of this are still seen near the modern aqueduct, constructed by Maria de' Medici, in 1618, to bring water to supply the gardens and the palace of the Luxembourg and the fountains of Paris. Arcueil is a favorite resort of the Parisians on holidays. It was for a long time the residence of the chemist Berthollet. As he frequently met at his house many of his learned friends who were devoted only to the study of the physical sciences, they formed together, in this tranquil retreat, a scientific society which, under the name of *Société d'Arcueil*, published several volumes of memoirs. The population of the village is 1,816.

ARCY, GROTTES D', the name of a vast stalactitic cavern, consisting of many compartments, situated in the department of Yonne, in France, within a short distance from the little town of Vermanton. The hill in which this remarkable excavation exists stretches into the valley of the river Cure. A narrow path over a wooded hill conducts to its entrance. One of the compartments is 1,200 feet long, 85 feet high, and 40 feet wide. In the first 2 compartments are found large blocks of stone, and in the 2d compartment is also a spring of good water. In the other compartments a number of stalactites hang from the roof, while stalagmites rise, column-like, from the ground. The crystallizations are formed by the water, as it filters through the overhanging rock, as well as on that part of the ground on which it drops. As the crystallizations rising from below are thus exactly under those depending from the roof, they frequently unite and form pillars. The caverns are supposed to have been quarries in former times, but to have been abandoned so long that every trace of human labor is obliterated. It is said that the stone

with which the cathedral of Auxerre was built was taken from the *Grotte d'Arcy*.

ARCY, PATRICK D', a distinguished engineer, born at Galway, in Ireland, in 1725, died at Paris in 1779. His parents, in consequence of their attachment to the house of Stuart, left Ireland and settled in France. In 1746 he fought in the French army against England. He fell into the hands of the British commander, Admiral Knowles, but was released after a short time of imprisonment and returned to Paris, where he devoted himself to scientific investigation. He wrote some able essays on mechanical science, and in 1749 he was received a member of the French Academy. In 1757 he reentered the army, and took an active part in the battle of Rossbach. In 1760 he published an essay on artillery, containing, among other interesting subjects, an account of experiments made by him to determine the most advantageous length of cannon. He is also the author of a paper on hydraulic machines, and of a paper on the duration of the impression of light on the retina.

ARDEA, a small village of the Pontifical states, in Italy, 20 miles S. of Rome, and 8 miles from the Mediterranean. It is the capital of the ancient Rutuli, and near it are some Cyclopean remains.

ARDEBIL, or ARDESTAN, one of the principal towns of the province of Azerbaijan, in Persia, is situated on a branch of the Araxes, 40 miles west of the Caspian sea. It contains about 600 families, and is surrounded by a ruined mud wall. It is an emporium of the caravan trade of Tiflis, Derbend, and Bakoo with Ispahan and Teheran. Two of the ancestors of the Sufite kings of Persia are buried here, and their tombs are highly venerated by all Mohammedans.

ARDECHE, a department in the south-east of France, wholly of a mountainous character. It contains important blast-furnaces for iron, and is noted for its extensive tracts of chestnut trees, the annual produce of which is estimated at 400,000 bushels. It also abounds in mulberry trees and vineyards. Pop. 386,000.—ARDECHE, a river of France which rises in the mountains of Cevennes, and, after a course of 45 miles, falls into the Rhone, near Pont St. Esprit. In the earlier part of its course it threads the most magnificent scenery, and before it reaches the Rhone falls over an almost perpendicular precipice to a depth of 100 feet. At this point is the famous bridge of Arc.

ARDELAN, a district of Persia in Koordestan, and a part of the province of Irak Ajmee. The chief towns are Sinna and Kermanshah.

ARDEN, a forest in which Shakespeare places the scene of his "As You Like it." According to Walter Savage Landor, it began near Stratford-upon-Avon and extended to Red-ditch and the Ridgeway, the boundary of Warwickshire and Worcestershire, having for its

centre the little town Henley, called to this day Henley-in-Arden.

ARDEN, EDWARD, a British Catholic, born at Parkhall, Warwickshire, England, in 1581, executed at Smithfield in 1584. He was of an ancient and respectable family, and, although a staunch religionist, by his integrity and loyalty had succeeded in preserving his possessions entire, and in holding his faith unmolested until the unfortunate occurrence which caused his death. In 1588 his son-in-law, John Somerville, a Catholic gentleman of fortune, while on a visit at his house, was persuaded by one Hugh Hall, a priest connected with Arden's household, to attempt the life of Queen Elizabeth, as the only means of delivering the realm from Protestant sway. Somerville actually departed on this mission, and while on his way to London attacked several Protestants, which led to his arrest and that of Hall, on a charge of high treason. The latter being put to the torture made a statement which led to the arrest of Arden and his whole family. Arden and Somerville were tried, found guilty of treason, and executed, while the others were pardoned. Arden's fate excited universal commiseration at the time, and the severity of his sentence was ascribed to the influence of the earl of Leicester, between whom and the Arden family a hereditary feud existed. Arden, himself a man of high spirit, had once called the earl an "upstart," and the offence seems never to have been forgiven.

ARDEN, RICHARD PEPPER, Lord Alvanley, chief justice of the court of common pleas of England, born at Bredbury in 1745, died in 1804. He was called to the bar in 1769, and soon after became intimately associated with William Pitt. In 1776 he was appointed a justice in the South Wales circuit, and in 1780 king's counsel. Upon the formation of a new cabinet at the death of the marquis of Rockingham, he received the appointment of solicitor-general and entered parliament. Upon Pitt's accession to office he became successively solicitor-general, attorney-general, master of the rolls, and in 1801, on the resignation of Lord Eldon, chief justice of the court of common pleas, on which occasion also he was created a peer, under the title of Baron Alvanley. He lived but 8 years, however, to enjoy his new honor.

ARDENNES, or ARDENNE, a hilly district of Luxembourg, Belgium. It is wild, wooded, and thinly inhabited. It has manufactories of fire-arms and hardware. Cattle, sheep, and horses are raised in great numbers, but little grain.—Also a frontier department of France, contiguous to Ardennes in Belgium, with which it was formerly united. It has a mountainous wooded surface, and a chilly and humid climate. It is watered by the Meuse and Aisne rivers, connected by the canal of Ardennes, which furnish valuable means of inland transportation. It has manufactures of fire-arms and metallic wares, earthenware,

glass, and chemicals. Area 1,955 square miles, which is divided into the *arrondissements* of Mézières, Rethel, Rocroy, Sedan, and Vouziers. Capital Mézières; pop. 382,000.

ARDESCHIR, or **ARTAXERXES** **BAREGAN**, founder of the Persian dynasty of the Sassanides, died about A. D. 260. His father, an obscure shepherd, claimed descent from the royal line of Darius, who was conquered by Alexander the Great, and the son, remarkable in his youth for courage and force of character, by ingratiating himself with the governor of Dirabjeid, gradually gained an importance which brought upon him and his patron the enmity of Ardovan, the king of Persia. Ardeschir then boldly announced his intention to recover the throne of his ancestors and to exterminate the descendants of its usurper. He gave battle to Ardovan, whom he vanquished, and put to death, and caused himself to be proclaimed *Shahan Shah*, "king of kings." Profiting by this victory, he rapidly recovered the provinces constituting the old Persian empire, and even extended its limits. The first 30 years of his reign were devoted to wars and conquests, and his victorious arms were carried from Georgia on the north to the banks of the Indus. His victories, however, do not constitute his sole claim to renown. During the years of profound repose which marked the latter part of his reign, he cultivated the arts of peace with an enlightened zeal. As a jurist and legislator he showed remarkable capacity, and many of his maxims are preserved to the present day.

ARDGLASS, a seaport town and parish of Ireland, county of Down, on the Irish sea. It is a bathing place, and is the rendezvous for the vessels engaged in the fisheries on this line of the Irish coast.

ARDOOH, a village of Scotland, county of Perth, near which are some remains of a Roman camp, the most complete in Great Britain.

ARDRAH, or **AZZM**, a town of Africa, capital of a province of the same name, kingdom of Dahomey, about 20 miles from the sea-coast, and bordering on a small lake; pop. 10,000.

ARE, the unit of surface in the French system of measures, equivalent to a square decimetre, or 1076.44 English square feet. Parts of an are are expressed by Latin prefixes, deciare, centiare, &c., signifying one-tenth, one-hundredth, &c., of an are. Multiples of an are have Greek prefixes; decare, hectare, &c., signifying ten, one hundred, &c., ares.

AREA, in geometry, the number expressing the size of a surface as compared with a unit of surface. A square of given size is usually taken as the unit, and usually a square whose side is a linear unit, such as an inch, a yard, or a mile. In this case, the area of a rectangle is evidently the product of the length by the breadth, and the area of a triangle half the product of the base by the altitude. The area of all other surfaces whatever is found by dividing the surfaces into triangles or rectangles. When the surface is curved or has curved boundaries, these

triangles or rectangles must be conceived of as infinitely small, and their amount can usually be calculated only by the aid of integral calculus.

AREMBERG, the name of an old German noble family, derived from a town and castle situated between Cologne and Julich. The counts of Marck possessed AreMBERG until the 16th century, when it passed to John Brabancón, of the house of Ligne, and was erected, in 1576, into a German dukedom, which disappeared on the dissolution of the German empire by Napoleon, though the family retained the ducal title. The AreMBERGs were always adherents of the Catholic church, sided with Philip II. and afterward served the house of Austria, in both civil and military capacities. They now reside at Brussels, and are among the wealthiest nobles of Belgium and Germany. As the owners of extensive estates in Hanover and Prussia, they belong to the privileged nobility, *Standesherrn*, in both those kingdoms.

ARENA, **BARTOLOMEO**, a French politician, born at Isola Rossa, Corsica, toward 1765, died at Leghorn in 1829. He early became known by the fervor of his political opinions and his devotion to France. He was active in organizing the national guard in his native island. As a deputy to the legislative assembly of France, he was among the most patriotic members, and denounced the designs of his countryman Paoli long before they were publicly developed. His accusations became so vehement and appeared so well grounded that Paoli was summoned to the bar of the national convention, to which he replied by inviting the English to Corsica. Meanwhile Arena was declared infamous by the so-called national assembly of the island, and sentenced to banishment. Nevertheless, in concert with Casabianca, he sustained Calvi against the English, who were under the command of Nelson; but finally was obliged to surrender the town Aug. 10, 1794. He then repaired to France, where he bitterly complained of the apathy of the convention at the loss of Corsica. On the evacuation by the English, he returned to the island; and in 1798, after a severe contest and bloody riots, he was chosen member of the council of Five Hundred by the electors of Golo. He showed himself always an unflinching republican, and none of the deputies exhibited more energy in opposition to the military revolution of the 18th Brumaire. It was reported at that time and currently believed, that Arena had rushed at Bonaparte with a dagger and exclaimed that if Corsica had produced a Cæsar, it should also have a Brutus. He publicly denied the attempt at assassination, though persisting in his abhorrence of the usurper's act. He was sentenced to be transported with several of his colleagues, but escaped the search of the police and retired to Italy, where he lived secluded at Leghorn. He constantly upheld his republican opinions, and always

prophesied the establishment of a European democratic commonwealth.—GRUSPE, a younger brother of Bartolomeo, particularly known for his participation in a conspiracy against Bonaparte when first consul. He very early evinced his devotion to the principles of the French revolution. In 1793, however, when only 21 years old, he was appointed commander of a battalion of Corsican volunteers, and distinguished himself at the siege of Toulon. In 1796, elected to the council of Five Hundred, he served one year as a deputy, and then returned to the army; but resigned his post on the revolution of the 18th Brumaire, in order to avoid serving under Bonaparte. He then repaired to Paris, where he engaged in a conspiracy devised by certain ardent republicans, Ceraochi and Topirio-Lebrun among the number. Bonaparte was to be assassinated at the opera; the signal was to be given by a young man named Diana, when the others were to be in readiness to support him; but their plan had been revealed to the police, who were on the alert and noiselessly arrested the conspirators during the second act of the performance. Arraigned before the criminal court, they defended themselves with such ingenuity, and there was so little material evidence against them, that they would probably have been acquitted but for another and quite different attempt against the first consul: the explosion of the infernal machine Dec. 24, which was at first charged to the republican party, while it was the work of royalists. The criminal court, as well as the government, thought it necessary to discourage further conspiracies by inflexible severity; consequently the proceedings were hurried. Arena, Topirio-Lebrun, Ceraochi, and Demerville, were sentenced to death Jan. 9, 1801, and executed on the 80th. They submitted to their fate with heroic constancy.

ARENAC, an eastern county of Michigan, bordering on Saginaw bay. Its surface is mostly heavily wooded. It covers an area of about 544 square miles. It is unorganized.

ARENDAL, a seaport town of Norway, on the Skager-Rack, lat. $58^{\circ} 28'$ N. long. $8^{\circ} 22'$ E. It is built on rocks projecting into a most commodious harbor. It possesses nearly 200 ships chiefly engaged in the lumber trade, and has 8 yards for ship building, a custom house, and a commercial school. Near it are productive iron mines.

ARENDT, MARDUS FREDERIX, a Danish savant, born at Altona in 1769, died near Venice in 1824. He was distinguished by his scientific exploration of many European countries, and his investigation of the ancient Celtic languages, mythology, and history. After having prepared himself for his travels by careful botanical and philological studies, he was sent by the Danish government in 1798 on a botanical tour into Finmark; but, as he was not successful in making a botanical collection, he lost the office, which, upon the recommendation of Count Re-

ventlow, he had previously held in the botanical gardens of Copenhagen. He had made, however, many interesting archaeological observations, and explored districts of northern Norway, which had never been visited before. Subsequently he travelled in Sweden, France, Switzerland, Hungary, Italy, and Spain. He published many articles on history and philology in French, German, Swedish, and Danish periodicals, and a portion of his manuscripts and drawings in reference to Scandinavian archaeology are preserved in the royal library of Copenhagen. He was a devoted linguist, and on his travels was always in the habit of carrying about him a great number of lexicons. While at Naples one of his Runic dictionaries attracted the notice of some Neapolitan police officers, who looked upon it with the greatest suspicion, taking it for a Carbonari document. He was arrested, and the long time which he had to pass in a badly ventilated prison before his discharge could be effected, had an injurious effect upon his health, and accelerated his death, which took place shortly afterward.

ARENSBURG, a seaport town of Russia, government of Livonia, on the south coast of the island of Oesel, of which it is the capital. It is situated at the mouth of the gulf of Riga, and has a considerable trade, though, owing to the shallowness of the harbor, all but small vessels generally anchor in the roads, 5 miles from the town.

ARENSHARDE, a district of Denmark, in the duchy of Schleswig. It is noted for the old Danish wall which runs through it, built in the 9th century, to defend Denmark from the incursions of the Saxons and Slavi. The wall extended completely across the country, and was 46 miles long. The people of this district are said to have been the first in Denmark to embrace Christianity, and a church was built there in the year 826.

AREOMETER, an instrument for determining the specific gravity of liquids, and by this the strength of spirituous liquors. Its more common name is hydrometer. The principle upon which it is constructed is this: when a bulb of glass or metal is immersed in water it is buoyed up by a force equivalent to the weight of an equal bulk of water, and in any other liquid by a pressure equal to the weight of the same bulk of this liquid. When the different weights are known of this bulb in water and any other liquid, the weights of equal bulks of these fluids are known, and the proportions of weight of one to the other. The areometer is a hollow bulb of glass or metal, with a weight below it to partially sink it, and keep the graduated stem above it in a vertical position. On this stem is marked the point at which the surface of the fluid cuts this stem, when it is immersed in pure water. In a saline solution it would not sink so deep, and the mark upon the stem at the surface is made to designate the density of the fluid compared with water, by reference to the tables which

accompany the instrument. In a lighter fluid, as spirituous liquors, it would sink below the pure-water mark, and the stem indicates, by its graduation, the proportional less density of the fluid than water. Sykes's hydrometer is the form adopted by the British government, and Baume's, of which there are two kinds, one for liquids heavier and another for liquids lighter than water, are in common use in France, and also in this country. A simple form of areometer is a set of glass beads, numbered and adjusted. When these are put in any liquid, the one of the same specific gravity with this liquid will float just beneath the surface. The mark upon this indicates, in thousandths parts, the specific gravity of the liquid.

AREOPAGUS, the hill of Area, or Mars, a craggy eminence in the city of Athens, not far from the Acropolis. In Greek annals it is famous as the spot where the celebrated council, or court of the Areopagus, held its sittings. This body was distinguished, even beyond the limits of Greece, by its great antiquity and high character, an antiquity dating back beyond the age of Solon, a character resting on the lofty position and spotless fame of its members. Solon is supposed to have introduced changes into the constitution of the Areopagus, and to have extended its functions, so that from being a merely criminal tribunal, its jurisdiction reached the general morals of society, and the political affairs of the state, touched every thing, in fact, which concerned the public weal. The court had duties connected with education and religion, had authority to punish impiety and sacrilege, and was charged with the preservation of the sacred groves. Its power was affected by the changing fortunes of the Athenian state. Pericles is said to have deprived it of a portion of its prerogatives, and later, its members were made responsible to the people. Its fame was alive in the time of Cicero, and as late as the emperor Theodosius (A. D. 880). In the records of Christendom, the Hill of Mars is memorable as the spot where the apostle Paul commenced the delivery of a discourse, the outline of which is preserved in the book of the Acts. There is no intimation that St. Paul was brought before the council of the Areopagus.

AREQUIPA, a province or intendancy of South Peru, 48 miles long, and 36 broad. It has the province of Lima on the north, Bolivia on the east, the province of Arica on the south, and the Pacific on the west. Its principal streams are the Arequipa, the Tambo, and the Chilli. It has a healthy climate and a fertile soil, yielding wheat, maize, potatoes, sugar, cotton, flax, cochineal, coffee, strawberries, and other products of the temperate zone. Considerable quantities of wine are also made here, and exported to the adjacent provinces. Pop. about 120,000.—**AREQUIPA**, capital of the above province, is situated in the valley of Quilca, about 40 miles from the Pacific coast, and a little more than 7,800 feet above the sea-level, lat.

16° 20' S. long. 71° 80' W. The river Chilli, called also Rio del Volcan, flows through it. The Andes lie to the east, and 14 miles to the N. E. towers the Volcan de Arequipa, one of the most celebrated volcanoes of the Andes, 20,300 feet in height, and constantly active. The city has a fine climate, and is well built, bearing the reputation of being one of the finest towns of South America. Its plaza or public square, has an elegant bronze fountain. There are in the city a cathedral, and several churches, a hospital, a college, 8 nunneries, and 6 convents. The houses are usually of only one story, and with strong walls and vaulted roofs, on account of the earthquakes, which are very frequent here. At 4 different times the city has been laid in ruins by them, in 1582, 1600, 1604, and 1725. There are considerable manufactories of gold and silver cloths, and of cotton and woollen stuffs here. It has a considerable trade with Buenos Ayres, its exports being brandy, wine, flour, cotton, and sugar, and its imports, cattle, dried flesh, tallow, cocoa, &c. It is also the entrepot of American and European goods, which it receives through its port, Mollendo. The great commercial road from Lima to the southern provinces passes through the city. Pop. about 36,000.—**THE VOLCANO OF AREQUIPA**, after Cotopaxi, the most celebrated of all the South American volcanoes, is situated in lat. 16° 24' S. and long. 71° 10' W. It has an altitude of 20,800 feet, and 500 feet of its summit lies within the region of perpetual snow. It is 14 miles distant from the city of Arequipa. Its crater is deep, and ashes and vapor constantly issue from it.

ARES, the Greek god of war, corresponding to the Mars of Roman mythology, born, according to Homer and Hesiod, of Zeus and Hera. He seems, in the former of these poets, to represent rather the wild fury of the fight, while Pallas Athena embodies the wary watchfulness of the skilful combatant, Diomedes, though a mortal warrior, wounds him, and drives him from the battle, and in the conflict of the gods, Pallas fells him with a stone. When wounded he roared as loud as 9,000 or 10,000 men. When he fell he covered 7 acres of ground. Eris (Strife), his sister, bore to him 2 sons, Deimos (Terror), and Phobos (Fear). Aphrodite bore to him Harmonia. The temples and images of Ares were not numerous. He is represented as a warrior, of a severe, menacing air, dressed in the heroic style, with a cuirass on, and a round Argive shield on his arm.

ARESON, JOHANN, a bishop and poet of Iceland, born in 1484, died in 1550. His trials commenced early in life, as his father's death compelled him, while a boy, to work for his mother's support. At 20 years of age he took orders, and in a mission to Norway showed so much talent that on the death of the bishop of Reikiavik, to which diocese he was attached, he was elected to fill his place. His election raised a storm of ridicule and opposition from disappointed competitors. He was accused of

not knowing Latin, and of appropriating to himself the diocesan property, and Ogmond, bishop of the neighboring diocese of Skalholt, even asserted his own right to appoint the new bishop, and marched at the head of a body of armed men to maintain it. Areson absented himself for a while, but upon his return boldly refuted the calumnies of his enemies, and was reinstated in his bishopric. His troubles, however, did not end here. The reformation broke out, and Frederic III. of Denmark, who, with many of his subjects, had embraced Lutheranism, wished to extend it over Iceland also. Areson, however, who had remained devotedly attached to the old faith, pertinaciously resisted every attempt on the part of the king, and with the assistance of his 6 sons, by his mistress Helga, constantly thwarted him. Frederic finally lost all patience and summoned Areson to Copenhagen, to which the latter replied by an armed invasion of the Protestant diocese of Skalholt, the bishop of which he took prisoner and treated with much harshness. He was outlawed, and forces having been despatched to bring him to terms, he was defeated, and with his 2 eldest sons, captured and executed. His devotion to the Catholic faith never wavered, and he had even proposed to the emperor Charles V., and to Edward VI. of England, to surrender Iceland to them, provided it should remain a Catholic province. His proposal to the latter shows a singular ignorance of the change which had been effected in the national religion of England. Areson was a man of much intelligence, and one of the truest poets of his time, as his literary remains amply testify. He is distinguished for having introduced printing into Iceland.

ARETÆUS, a physician who flourished in Cappadocia, a district of Asia Minor, in the latter part of the 1st and at the beginning of the 2d century after Christ. His contemporaries rank him next to Hippocrates. He wrote 2 works in connection with the causes, symptoms, and treatment of acute and chronic diseases, which are still extant. The best edition is that by Wigan, Oxford, 1723.

ARETHUSA, a fountain in Sicily near the city of Syracuse. The ancients supposed its waters to be anited with those of the river Alpheus in Peloponnesus. A cup, it was said, thrown into the waters of this river, would reappear in the Sicilian fountain. Arethusa, according to the ancient legend, as related by Pausanias, was a Nereid, with whom the hunter Alpheus became enamored; but the nymph, not responding to his ardent love, fled to the island of Ortygia near Syracuse, and there changed herself into a fountain. Nothing daunted, Alpheus metamorphosed himself into a river, and in this form made his way under the sea to Ortygia. According to another account, Arethusa, while bathing in the river Alpheus, was surprised by the river-god, and Diana, in order to enable the nymph to escape his pursuit, changed her into a fountain, which

passed under the sea to Sicily.—Another Arethusa was one of the Hesperides, the guardians of the golden apples, to obtain which was one of the 12 labors of Hercules.

ARETIN, ADAM, baron von, a Bavarian statesman, born at Ingolstadt, in 1769, died in 1822, was in 1817 the deputy of Bavaria at the Frankfort diet, and acquitted himself of his mission in a manner satisfactory to his government. He was a munificent patron of the fine arts, and possessed one of the largest collections of engravings and pictures in Munich, which, after his death, was sold by auction.—CHRISTOPH, baron von, brother of the preceding, born also at Ingolstadt, in 1778, died at Munich in 1894. He held various public offices, and at the time of his death, that of chief justice of a court of appeal. He was for some time deputy at the Bavarian diet, where he advocated with great vigor his ideas, which were rather too cosmopolitan for the narrow sphere of Bavarian politics. His last work was, *Das Staatsrecht der constitutionellen Monarchie*. He left it unfinished, but after his death it was completed by Rotteck, and brought out at Leipzig in 1839.—GEORG, baron von, brother of the preceding, born at Ingolstadt, in 1771, died at Munich in 1848, was connected with the court and the inspection of rivers and lands of Bavaria, from 1798 to 1809, when he was appointed governor of the district of Brixen. While exerting himself to quell the insurrection which had broken out in the Tyrol, he was taken prisoner by the Austrians and confined in a fortress in Hungary. He was set free in 1810, but on his return to Bavaria, retired from public life, devoting himself to agricultural and literary pursuits.

ARETINO, a celebrated Italian writer, whose real name was Leonardo Bruni, born in 1369, at Arezzo in Tuscany, whence he is commonly called Aretino. Taken by the French and imprisoned with his father in the castle of Quarata, he often gazed at a portrait of Petrarch which happened to be suspended there, and which kindled in him a love of letters. He studied hard at Florence and won distinction under her most famous men, giving 2 years entirely up to Greek under Emmanuel Chrysoloras. In 1405 he won by public trial the post of apostolic secretary to Pope Innocent VII. and held it under Gregory XII., Alexander V., and John XXIII. In 1410, the republic of Florence named him chancellor. This post he held but a few months, returning again to the service of Pope John XXIII., in spite of his having been married in 1412. When this pope was deposed by the council of Constance he returned to Florence (1415) and wrote, among other works, his history of Florence. The grateful republic gave him citizenship and a pension. He was again made chancellor and continued such until his death. He died suddenly at Florence, March 9, 1444. His funeral oration was solemnly pronounced in the church of Santa Croce, and the orator Giannozzo Ma-

netti by order of the republic crowned him with laurel. His history of Florence was placed upon his breast, and the sculptor Bernardino Rossellino, was charged to raise to him a marble tomb which still exists.

ARETINO, Guido, often called Guy Aretin, or d'Arezzo, from his native town in Tuscany, was a Benedictine monk, born near the end of the 10th century. Endowed with inventive genius, he early occupied himself in devising new methods of writing and teaching music. The ancient principles of the art had been so much altered before his time, that it was necessary they should either be reestablished or replaced by others. This latter task Guido undertook. Instead of a group of tetrachords like the Greek method, or of heptachords, such as Gregory adopted, he proposed a new system, consisting of hexachords. The six syllables by which he designated his notes, were suggested to him, it is said, by a Latin hymn to St. John :

UT queant laxis *RE*sonare fibris
*MI*ra gestorum *FA*muli tuorum
*SO*lve polluti *LA*bili reatum

To the seventh note, *si*, he gave no name, and for a long time it continued to be called *b*. Guido's new method of solmization attracted much attention at Hamburg, Osnaburg, and even in France. Such was its merit, that whereas ten years had been required to learn how to read music, now a chant could be mastered in a few days, and a year sufficed to make a skilful singer. Pope John XIX. (or XX.), wishing to form his own judgment of this marvel, sent three messengers in 1022, inviting Guido to his court. The monk went, presented a collection of the offices for a year, marked according to his method, and the pope, we are told, tested the method, by learning a verse perfectly before rising from his chair. Guido not only facilitated the reading of music, but simplified the manner of writing it. Since St. Gregory, attempts had been made to improve musical notation. Already the seven letters, formerly written on one line, were placed on parallel lines, to indicate the rising and falling of the voice. Guido, instead of repeating the letter, wrote it at the beginning of the line, and each time it occurred, marked a point on the line. He ended by placing the points within the lines, thus rendering the written composition more compact. Guido has the fame of being the inventor of the modern gamut. His method was in general use until the end of the last century. Guido wrote several pieces, the two most important of which are the *Micrologus* and the *Argumentum Novi Cantus inveniendi*, which explains his system of notation.

ARETINO, Pierro, a celebrated Italian writer of the 16th century. He was born at Arezzo on the night of April 19, 1492, being the natural son of a gentleman of Arezzo named Luigi Bacci. He was brought up by his mother, a woman named Tita. While still very young, he was obliged to leave his native city on account of having written a sonnet against

indulgences, and went to Perugia, where, for a long time, he supported himself as a bookbinder. Thence he went on foot to Rome, in the hope of bettering his fortune, was received into the house of Agostino Chisi, a rich merchant, and obtained employment in the service of Popes Leo X. and Clement VII.; but, having composed 16 sonnets for as many licentious designs of Giulio Romano, he was forced to retire to Arezzo (1524). Thence he shortly after passed to the court of Giovanni de' Medici, who was at that time in the service of Francis I. of France, and who was also father of Cosmo, duke of Florence. At length he returned to Rome, where he made love to the cook of Monsignor Giovanni Mattei Giberti, president of the court of requests under Pope Clement VII., and composed a sonnet in her praise. A Bolognese gentleman, Achille della Volta, burned with the same culinary fires, and finding Aretino one day alone, rushed at him with jealous rage, stabbing him 5 times in the breast and maiming his hands (1525). Disgusted at the refusal of the pope to punish this assassin, Aretino left Rome, resolving never to return, and sought once more the court of Giovanni de' Medici. This protector, however, was soon lost to him, having been struck by a musket-ball in a combat toward the close of the year 1526. He expired soon after in the arms of Aretino, who now resolved to have no more protectors, but to live in the full enjoyment of liberty, supporting himself by his pen. With this view he removed to Venice (March 25, 1527), where he was well received by the doge Andrea Gritti, who, not liking to hear him speak ill of Pope Clement, strove to reconcile them, and, at length, in 1530, Aretino acknowledging his fault, the pope wrote him a *breve*, and promised him his sister in marriage. The bishop of Vasone, major-domo to the pope, being this same year with the emperor Charles V., wished to have Aretino knighted by him; but the poet refused, saying he did not wish for honors without incomes. In 1543, when Aretino came with the ambassadors of the republic of Venice to meet Charles V., while on his passage into Germany, the emperor not only wished to have him near, but caused him also to ride at his side, held a long conversation with him, made him a present in money, and recommended him strongly to the Venetian government. Once more Aretino went to Rome, in company with the duke of Urbino. He had previously received from Pope Julius III. the rank of Cavaliere di San Pietro, and hoped to be created cardinal, but came away with empty hands, sad and disgusted again. During 1557, having heard of some outrageous obscenities of which his infamous sisters had been guilty, he found them so comical that he threw himself back in his chair, laughing; the chair was thrown over backward by the shock, and he struck heavily upon his head. The blow was so serious as to cause his death. He was buried in Venice, in the church of San Luca, without any inscrip-

tion. He showed both taste and skill in painting and sculpture. His vices were pride, gluttony, and sensuality. He had no wife, but many mistresses, by whom he left several daughters. The number of pensions, presents, and distinctions he received from princes and great lords, was extraordinary. Many sonnets were written in his honor; he was called the divine, and, from his satires, the scourge of princes. He was a member of various celebrated societies; no less than four medals were struck in his honor, which have come down to our time. On the other hand, he was many times stabbed and bastinadoed, and two disgraceful medals were struck in derision of him. Gifted with a fervid genius, he held a distinguished place among the literati of his age, and his works, both in prose and poetry, were in the highest degree applauded and sought after. Yet he had little or no knowledge of Latin, and none of Greek, and boasted that he had never been to school, and never had a teacher. He composed with great facility, and wrote in strange variety, works either sacred, profane, satirical, or obscene, boasting that with a bottle of ink and a bundle of paper he could make a thousand scudi per annum.

ARETIUS, BENEDIOT, a Swiss botanist and theologian, born in Berne in 1505, died April 23, 1574. He studied philosophy, and after filling the chair of logic in the university of Marbourg for a year, returned in 1549 to Berne, where he remained for the rest of his life. He embraced with zeal the doctrines of Calvin, and wrote a number of theological treatises, marked by much controversial ability. His leisure hours were devoted to botanical excursions among the Bernese mountains, and his researches in this field have gained him a distinguished name in the annals of science.

AREZZO (ARRETUM), a city of Tuscany, of about 10,000 inhabitants. It was one of the principal states of ancient Etruria. Its walls are undoubtedly Etruscan, and were of importance to the Romans as a barrier against the Cisalpine Gauls. The consul Flaminius, while acting against Hannibal, had his headquarters here previous to the disastrous battle of Thrasymene, and when Cæsar marched upon Ariminum, he sent Antony with 5 cohorts, to occupy Arretium. It was celebrated for its terra-cotta vases, ranked by Pliny with those of Samos and Saguntum. They are of red clay, with stamped patterns, and an interesting collection of them may be seen in the museum of the present city. During the contest of the Gauls and Ghibellines, Arezzo fought against Florence, but was finally obliged to yield. Among the public buildings are the magnificent Loggia, by Vasari, the cathedral, the churches of Santa Maria della Pieve, and Badia di Santa Flora, the Fraternita, the Museo Bacci, in which is a large Etruscan coin weighing upward of 2 pounds, and the Palazzo Pubblico, which has upon its front a curious series of the armorial bearings of the successive podestats,

amounting to several hundreds. Arezzo has given birth to many distinguished men, such as Mæcenas, Petrarch, Vasari, Guido Aretino (the inventor of musical notation), Leonardo Bruni, Pietro Aretino, and Count Fossombroni.

ARFE, HENRIQUE DE, an artist born in Germany, who settled at the beginning of the 16th century at Leon, in Spain, and executed, soon after his arrival, a silver tabernacle for the cathedral of that town, which was chiselled so admirably that he received similar commissions for the cathedrals of Cordova and Toledo, and the Benedictine monastery of Sahagun. His most remarkable work, which took him 7 years, from 1517 to 1524, is his tabernacle for the cathedral of Toledo. Its form is hexagonal, the style Gothic, and it is adorned with 260 statuettes, beside many bas-reliefs, and other ornaments. This tabernacle, which was gilded by Francisco Nerino in 1524, absorbed not less than 5,292 ounces of silver and gold, and is a superb monument of Henrique's genius.—ARTEMIO DE, Henrique's son, acquired also distinction in the same art, but was not equal to his father. In 1544 he executed two tabernacles, one for the cathedral of Santiago, another for the parish church of St. Maria de Medina de Rioseco. Antonio preferred the Grecian and Roman styles to the Gothic, which was the favorite style of his gifted father.—JUAN DE ARFE Y VILLAFANE, Antonio's son, born at Leon in 1585, died at Madrid in 1595. He studied anatomy at Salamanca, and passed some time at Valladolid, which in the middle of the 16th century was the Athens of Spanish artists. He made his debut with a tabernacle for the cathedral of Avila, on which he spent 7 years, from 1564 to 1571. He was remunerated at the rate of 12 ducats for every mark of silver employed. Subsequently he executed a tabernacle for the cathedrals of Seville, Burgos, Osma, and for St. Martin's church at Madrid. His Avila tabernacle was one of the most beautiful tabernacles of Spain. His Seville tabernacle is the most imposing, but the one in the cathedral of Osma, the smallest in size, and in which he had the assistance of his son-in-law, Leanes Fernandez del Moral, was the most finished in design and execution. He also produced some good engravings on lead. He was a man of remarkable versatility of talent.

ARGÆUS, MOUNT, is the loftiest mountain of Asia Minor, height 18,000 feet, circumference of base, 60 miles; area, 800 square miles. It is isolated except on the south-east slope, where it is connected to a branch of the Taurus chain. The lowest line of snow is 11,700 feet.

ARGALI (*ovis ammon*), the mountain sheep, the big-horn of the west of the Rocky mountains, the *Arreata* of the Indians. It is nearly of the size of a deer, which it resembles in its coat of short, harsh hair, of a grayish yellow color, with a reddish or blackish stripe along the back, and a large spot on the rump of the same color. In winter its color is of a deeper and redder hue, with the throat and belly white. It has very

large laterally twisted horns, like those of the common ram, rising from near the eyes with a curvature backward, then forward, and with a forward and outward divergence of the tips of the horns. They are transversely waved or wrinkled, for something more than half of their length, but are quite smooth and polished toward the points. The horns of the female are much smaller than those of the male, and more resemble those of the goat. The mountain sheep are found in great numbers on the elevated mountain ranges of northern Asia, on the steppes of Siberia, the highlands of California, and the Rocky mountain range of America. They live in herds on the highest summits, feeding on lichens, mosses, and small shrubs. They are extremely shy, watchful, and timid. Their swiftness of foot is amazing, and their agility in bounding from rock to rock is unsurpassed by that of any quadruped. They can only be stalked with the greatest care, upwind, or shot from ambush. During the rutting season, under the influence of sexual excitement, the males become extremely pugnacious, and fierce combats take place for the possession of the females. The flesh of the young mountain sheep is said to be tender and delicate, but that of the old males is apt to be very rank and disagreeable. The hide, from its soft and spongy character, is of little value for leather, though it is used by the Indians in common with deer-skin, to which, however, it is very inferior in quality. The argali is said to be the origin of the common domestic sheep, to which, however, it bears but a slight resemblance. It is stated, however, that the domestic sheep, when transported to warm climates, loses its peculiar wool, and assumes a coarse coat of straggling, reddish hair, when it comes greatly to resemble the argali. This animal was first distinguished as an inhabitant of the United States by the exploring expedition of Lewis and Clark, although it had been previously recognized as a native of California by Veregas. The best description of this animal, with the distinctions between it and what is called the "woolly" sheep, which is really a goat, with short black horns and a beard, is to be found in Irving's "Adventures of Captain Bonneville," and there are also full accounts of both animals, with a characteristic engraving of them, in Frank Forester's "Field Sports."

ARGALL, SAMUEL, born in Bristol, England, in 1572, and died in 1639. He was one of the early adventurers to Virginia, and deputy-governor of that colony for two years. He makes his first appearance in the colonial annals in the year 1609, as an enterprising trader, making several voyages in the exercise of his calling. His first public exploit was the abduction of Pocahontas, in 1612, whom he inveigled from the care of a chief, who had been intrusted by Powhatan with the charge of his daughter. The temptation to the perfidious chief was a brass kettle. Taking her to Jamestown he gave her to the governor, Lord Delaware. This was

under the third charter of James I. After the departure of Lord Delaware and the deputy-governorships of Sir Thomas Dale, George Percy, and Gates, Argall became deputy-governor, a post he occupied for 2 years from 1617. He was one of the greatest tyrants who ever ruled in America, bringing the despotism of the quarter-deck into the forests of Virginia, and so outraged every law that even in his own council he found bitter opponents, who procured his recall. He was succeeded in 1619 by George Yeardley, and returned to England soon after with immense wealth. He was a rude sailor, utterly uncultivated, and of great rapacity, with no higher motive than intense avarice. At the same time, he was a reckless soldier, having, during the governorship of Dale, commanded an expedition which sailed to Port Royal, in Nova Scotia, which place he reduced and plundered, driving the French colonists into the woods. It has been stated on the authority of English printed works, that on his return to Virginia he appeared before New York, then New Amsterdam, and summoned the Hollanders to surrender, on the ground that Henry Hudson, the discoverer, was an Englishman, and that the sovereignty accrued to his sovereign. This account, however, has been carefully sifted by Brodhead in his "History of New York," who arrives at the conclusion that the whole story is fabulous. Argall, even in that day, was considered a pirate, and was certainly detested by the colonists, against whom he enforced the rigors of martial law with extreme severity. After the death of Lord Delaware, Argall took charge of his estate, and letters of his countess now in existence accuse him of the most flagrant and barefaced peculation.

ARGAND LAMP, a lamp invented by Aimé Argand, of France, in 1789. The principle of it consists in the use of two metallic cylinders, one within the other, between which is the circular wick connecting with the oil below. The inner cylinder is open at top and bottom, and through this, when the chimney is placed upon the lamp, a current of air is drawn up, which feeds the inner surface of the ring of flame, while the external surface is fed by air passing up outside of the outer cylinder. The oil is thus thoroughly consumed, and gives its maximum of light. The contraction of the chimney just above the burner is an ingenious contrivance for turning the current of air and concentrating it upon the flame. This form of lamp is applied to the uses of the chemist with great advantage for heating crucibles, &c.; and it may be made much more powerful by blowing into the inner cylinder a current of air or of gas.

ARGELANDER, FRIEDRICH WILHELM AUGUST, a German astronomer, born March 22, 1799, at Memel, Prussia, educated at Königsberg, a pupil in astronomy of Bessel, and his assistant in the observatory. In 1828 he took charge of an observatory at Abo, where he remained till the observatory was burned in 1838,

and then superintended the building of the new one at Helsingfors. In 1837 he was appointed to his present post of professor of astronomy and director of the observatory in Bonn. His labors have been particularly directed to the fixed stars, and the investigations of their motions, including the movement of our sun among them.

ARGELES, an *arrondissement* in the department of Hautes Pyrénées, France; area, 523 square miles; pop. in 1852, 42,558. It is divided into 5 cantons, and subdivided into 99 communes.

ARGENS, JEAN-BAPTISTE DE BOYER, marquis d', a French writer, born at Aix, in 1704, died in 1771, at Toulon. He was intended by his family for the profession of law, but he preferred the army. After one or two years of service, he made an escapade to Spain, in company with a charming actress, with a view of marrying her, but was overtaken by his relatives, who, in order to make him forget his beloved "Sylvia," as he calls her in his "Mémoires," dispatched him to Constantinople as secretary of legation to the French embassy. On his return from Turkey he again joined the army; but during the siege of Kiel, a fall from his horse disabled him for military service. As his father had disinherited him, he took to literature to support himself, and availing himself of the liberty of the press in Holland, he published there his *Lettres Juives*, *Lettres Chinoises*, and *Lettres Cabalistiques*, which attracted the attention of Frederic William I. of Prussia, who wished him to come to Berlin, but D'Argens would not go, because, as he wrote in apology to the prince, he was afraid that his tall figure would tempt the old king to enrol him in his army. However, after the accession of Frederic II. to the throne, the marquis went to Potsdam, and was appointed director of the fine arts of the academy of Berlin, and was on the best of terms with the king, until he married an actress without asking the royal consent. His most important work is his *Histoire de l'esprit humain*.

ARGENSOLA. I. BARTOLOMÉ LEONARDO DE, a Spanish historian and poet, born at Barbastro, in Aragon, in 1566, died at Saragossa about 1631. He entered the church, was made chaplain to Donna Maria of Austria, and, after his visit to Naples, a canon of Saragossa. His works are a continuation of Zurita's "Annals of Aragon," "A History of the Conquest of the Moluccas," and some poems. II. LUPERO LEONARDO DE, brother of the preceding, born in 1565, died at Naples, in 1618. At the age of 25 he went to Madrid, and was made secretary to the princess Maria of Austria. Philip III. appointed him historiographer of Aragon. When the count of Lemos received the vicereignty of Naples he made Argensola his secretary. He wrote 3 tragedies and some poems. The brothers, from the purity of their style in poetical composition, have been called the Horaces of Spain.

ARGENSON, RENÉ LOUIS VOYER, marquis d', born 1696, died 1757, a scion of one of the great historical families of France, originating in Touraine, where, from time immemorial, they had been owners of the estate of Paulmy, as well as of that from which they took the name of Argenson. In 1741 Louis XV. appointed René minister of foreign affairs, and he held this office until 1747, when the intrigues of Spain, whose policy he had frustrated in his negotiations with Italy, brought about his resignation. From that time to his death he devoted himself exclusively to science, and became the intimate friend of Voltaire, who declared his *Considérations sur le gouvernement de la France* to be worthy the pen of Plato.—MARC PIERRE, comte d', brother of the preceding, born in 1696, died in 1764, was for some time secretary of the war department under Louis XV., but his principal claim to the gratitude of posterity rests on the services which he rendered to science. D'Alembert and Diderot began their Encyclopædia under his auspices, and he furnished Voltaire with the materials to his *Siècle de Louis XIV.*—MARC ANTOINE RENÉ, nephew of the preceding, born in 1723, died in 1787, was governor of the arsenal, and distinguished himself by the splendid collection of 150,000 volumes with which he endowed the library of that institution. He edited 40 volumes of *La bibliothèque universelle des romans*, including some of his own romances. He was ambassador in Switzerland, Poland, and Venice, but, on being disappointed in his hopes of obtaining the Roman mission, he resigned his public offices and devoted himself to literary pursuits. He was a member of the French academy.—MARC RENÉ VOYER, a member of the same family, born at Paris in 1771, died there in 1842, served for a considerable time as adjutant of Gen. Lafayette. In 1809 he became prefect of Deux-Néthes, but relinquished his place on finding that his determination to protect the constitution against the despotism of Napoleon was not supported by the ministry. He took an active part in the expulsion of the English from Walcheren, as he happened to find himself at Antwerp when they landed. During the Hundred Days he was a member of the house of representatives, and in conjunction with Lafayette and Benjamin Constant, he belonged to the deputation of Haguenau, who besought the allied forces to prevent the return of the Bourbons. In 1815, as member for Belfort, he distinguished himself by his eloquent denunciation of the massacre of the Protestants in the north of France. In 1830 he reentered the chamber of deputies as member for Strasbourg, and on that occasion created a great sensation by taking his parliamentary oath with the words *Je le jure, sauf les progrès de la raison publique*. In May, 1832, he was one of the opposition members who signed the famous *Compte rendu*, and in Oct. 1833, he signed the manifesto published by the society of *Des droits de l'homme*.

He was one of the chief leaders of the secret society *Charbonnières démocratiques*, and was designated as the future dictator of France, in case of a revolution.

ARGENTAN, the chief town of a district in the department of Orne, France. It is agreeably situated on a hill in the midst of a fertile plain. Its principal church offers a fine specimen of Gothic architecture. It contains a college, manufactures of linen and lace, called *point d'Argentan*, tanneries, &c., and is a market of some importance for cattle, cheese, and butter. Pop. 6,044.

ARGENTARO, the highest of the Balkan mountains, between Servia and Macedonia, in European Turkey.

ARGENTEUIL, a town of France, 13 miles N. W. of Paris, on the Seine, known for its brisk wine and some remains of an ancient nunnery where Heloise retired after the misfortune of Abelard, before she became abbess of the Paraclete. Pop. 4,877.

ARGENTEUS CODEX, an old uncial MS. of the 4 gospels, written or stamped in silver letters (except the initials, which are in gold) on violet-colored vellum, in the Mosso-Gothic dialect. It is supposed to have been executed about the 6th century, and is a copy of the version made in the 4th century by Ulphilas, the Arian bishop of the Mosso-Goths. This codex was discovered in the library of the Benedictine abbey of Werden, Westphalia (1597), and after changing hands, either honestly or by stealth, several times, came at length into the possession of the library of Upsal, for the consideration of £250. Fac-simile editions of some portions of it have been published by Knittel, and also by Maio (1819). Maio has also discovered some palimpsests of this version in the Ambrosian library, which have been published. These more recent discoveries have aided to fill the chasms in the Argenteus Codex, and so to enhance its value to biblical literature.

ARGENTIERA, ARGENTARIA, or KHMOLI (anc. *Chmolus*), one of the islands of the Grecian Archipelago. It was celebrated among the ancients for its earth or chalk (*ἡ κίμωλια γη*), used in medicine, and by fullers. Silver mines were formerly worked here, which gave the name to the island. It is about 18 miles in circuit, and is in lat. 36° 49' 3" N. long. 24° 38' 5" E.

ARGENTINE CONFEDERATION, THE (*Confederacion Argentina*). The states forming the confederation bearing this name have not been the same at all periods of its history. From the first, as now, however, it has been composed of a number of states lying upon the sources of the Rio de la Plata, or Silver River, of South America, and from that fact is taken its name of the Argentine or Silver Confederation. The country, including the state of Buenos Ayres, which has been until recently an important member of the confederation, embraces all that part of South America which lies between the river Paraguay on the east

and the Andes on the west. It is bounded on the north by Bolivia; is separated on the east by the Paraguay from Brazil, Paraguay, and Uruguay (sometimes called the Banda Oriental); is washed on the south-east by the Atlantic ocean; divided on the south-west from Patagonia by the Rio Negro, and on the west from Chili by the Andes. It lies between the 20th and 40th parallels of south latitude and 56 and 70 degrees west longitude, covering an area of about 780,000 square miles. The mouth of the Rio de la Plata, through which the waters of the greater part of this territory empty into the sea, was discovered by Juan Diaz de Solis in 1512. The settlement at Buenos Ayres (fine air) was begun by Don Jorge de Mendoza as early as 1586, and parties under his orders proceeded to the exploration of the country, reaching as far as Assuncion on the Paraguay river, in about lat. 26° S., now the capital of the republic of Paraguay. Many settlements were made in this century, and some progress made in the civilization of the Indians, under Don Juan de Garay, who was made lieutenant-governor about 1580, these provinces being then considered a part of the viceroyalty of Peru. In 1620, under Philip III. of Spain, a new government was formed, including the provinces on both sides of the Paraguay, and called that of Rio de la Plata. In 1776, most of the same territory was erected into a viceroyalty, with Buenos Ayres as its capital. In 1806 the country was invaded by a British army, and Buenos Ayres was captured, but it was held only a few months. At the time of the French invasion of Spain, the country was much convulsed, but for a time admitted its dependence upon the mother country. In 1810, however, the colonists deposed the viceroy, and established a provisional government of 9 persons, in the name of Ferdinand VII. Cordova, Paraguay, and Uruguay, refused the authority of the new government, and a long series of civil conflicts ensued. The return of Ferdinand VII. to power did not bring a colonial policy which was satisfactory, and in 1816 a congress was held at Tucuman (July 9), in which the independence of the provinces was declared. Although there was an attempt to make the Argentine confederation the successor of the whole viceroyalty of Buenos Ayres, it was impossible to combine the various interests into one republic, and serious struggles ensued in the attempt to produce this result. The want of a homogeneous character in the people, and the conflicting ambitions of various leaders, resulted in the formation of two republics, Paraguay, on the upper waters of the Rio de la Plata, and Uruguay, now the "Oriental Republic" (at one period of its history called Monte Video from the name of its chief city, and always spoken of, from its position, as the "Banda Oriental"), at the mouth of that river, beside the Argentine confederation proper. The province of Uruguay was for a long time the continual theatre of war, being claimed by both

Brazil and the Argentine confederation, while chiefs of its own were attempting to secure its independence. In 1825, however, the Argentine confederation was established as a federal union of 13 independent states, it being agreed that the captain-general of the province of Buenos Ayres should be charged with the foreign relations of the whole confederacy, and act as its supreme executive. These 13 states, whose general position upon the map we have already indicated, are occupied by a scattered and mixed population, estimated in 1855 at about 1,200,000. The most important was Buenos Ayres. Next in population and influence were Tucuman, Santa Fé, and Cordova. The rest were Entre Rios and Corrientes, Catamarca, Rioja, San Juan, Mendoza, and San Luis, Salta, and Santiago. In most of these provinces there was then, and indeed there is still, but one large town, the centre of a pastoral, an agricultural, or a mining population, scattered over a large extent of country. Buenos Ayres has but one town (the city of that name); all the rest of its domain, an area of 75,000 square miles, being divided into estancias for the raising of cattle. Santa Fé was the only town in the province of that name; Bajada the only town in Entre Rios. The sizes of the different states was and is extremely various. The grazing states are very large; those which have something of an agricultural character are somewhat less, while those, like Catamarca, devoted almost wholly to mining, are comparatively small. The character of the population was equally varied. There was almost a feudal aristocracy in the north; in the wide ranges of the pastures the herdsman felt and exercised a rude power; and there was a greater degree of moderation in the agricultural states. There was very little element or bond of union.—Buenos Ayres as the only seaboard state, and as much the richest, naturally took the lead, both in preparing the way for independence and in forming the confederacy. The higher classes of her inhabitants possessed immense wealth, both in lands and other property. Many of them had been educated in Europe, and had introduced into South America the refinements of a high civilization, and hoped to extend those refinements over their whole country by means of a form of government. But under their ideas this government was to be wielded by the rich and educated classes. Their party, which called itself the Unitarios, succeeded in framing the constitution of 1825, under which the nation was represented by a small aristocracy. Rivadavia, as captain-general of the province of Buenos Ayres, was the first and only president of the confederation under this constitution. The greater part of this large province took its political bias from the independent and republican tone of the cattle drivers and herdsmen who knew their power, and were not averse to asserting it. They soon found a leader in Juan Manuel de Rosas, one of the *gauchos*, or cattle drivers of the interior, who

had some reputation and some army-rank in the revolutionary combats, and began about this time, at the age of 32 years, to take part in political affairs. He made his residence the centre and himself the leader of all the operations against the Patagonian savages, and thus secured the confidence of the peasantry, and was subsequently able to control the coöperation of the savage tribes. He had opposed the Unitarios at the time of the union, although unsuccessfully; but, by 1827, he had acquired sufficient influence, and found himself certain of the aid of other popular chieftains, such as Bustos, governor of Cordova, Ibarra, commandant of Santiago, and Quiroga of Rioja. They protested against the constitution and government of 1825, took up arms in force in support of their protest, and compelled Rivadavia to resign his post without a battle.—In July, 1827, they chose Dorrego governor of Buenos Ayres. But the established army of the republic soon after got up a counter-revolution under one Lavalle, an officer of some distinction. He defeated Dorrego and Rosas, and shot the former without a trial. Rosas and Quiroga, with Lopez of Santa Fé, formed a new league, and Lavalle was obliged to yield to their superior force. He resigned his post and Rosas was chosen in his place. We have given this much space to these events because they resulted in placing at the head of the confederation the man who remained there for many years. He was reelected governor of Buenos Ayres, a position which placed him at the head of the foreign relations of the confederation, and gave him a very general control of its internal affairs, as often as his term expired, until 1835, when he refused to be again a candidate. Five times the honor was tendered to him and as often refused. He was then offered, and accepted, the dictatorship for 5 years, and the appointment was twice renewed. He held the office until 1852, and was the sole and uncontrolled ruler of Buenos Ayres and practically of the Argentine confederation during the whole of that time. From 1827 to 1852 there was no meeting of the national congress or constituent assembly. It is difficult to say with what degree of moderation he exercised these unlimited powers. He has been represented as an arbitrary and bloody tyrant, and accused of the treacherous murder of all the friends who placed him in power. He certainly ruled with a strong hand, and was neither slow nor scrupulous in his means of defending or of advancing himself. But he maintained a government under which his country increased in population and material prosperity, notwithstanding continual internal dissensions and foreign wars, and retained a strong and generally triumphant party of friends until the last.—Upon the idea that all the provinces of the former viceroyalty of Buenos Ayres belonged to the Argentine confederation, a contest was long kept up to attempt to bring into it the states of Paraguay and Uruguay. The former, protected in part

by its natural position, and more by the policy of isolation and the strong executive power of its singular dictator, Francia, almost entirely escaped foreign conflict. But, as we have already mentioned, the latter was constantly claimed both by the Argentine confederation and by Brazil. Its independence (under the name of the republic of Montevideo) was at last acknowledged by a treaty mediated by Great Britain in 1828. But this did not check the ambition of Rosas to include the other seaport of the Rio de la Plata in his dominions, or bring peace to the Banda Oriental. By the treaty, the Argentine confederation agreed to protect and sustain the government of Montevideo, and this was made an excuse for frequent interference in the formation of that government, even by force of arms. Oribe, the governor of Montevideo at the time of the treaty, was a partisan, if not a creature and tool, of Rosas. To him there was a strong faction opposed, led by Fructoso Rivera, a man of great popularity with the country population, who had raised himself to influence much in the manner employed by Rosas himself in Buenos Ayres. The matter came to a war, first of blockades and then of armies, between Oribe supported by the Argentine confederation on the one hand, and Rivera sustained by the Argentine exiles in Montevideo, and also by a French fleet, on the other. The intervention of the French was induced by a quarrel which had arisen between a French vice-consul and the dictator. After much mixed fighting, in which no party obtained a decided advantage, the French difficulty was settled by the appointment of a new consul, and in 1840 a new treaty of peace, of much the same tenor as that of 1828, was made between the confederation and Montevideo. This peace was not of long duration, and in 1845, Oribe being the regularly elected president of the republic of Montevideo, and the Rivera faction in the armed occupation of its principal city, Rosas was "assisting and protecting" the former with an armed force. This was the occasion of an "armed intervention" by Great Britain and France, on the plea of enforcing the treaties of 1828 and '40, and restoring peace to the Rio de la Plata. Mr. Ouseley on the part of the former and M. Deffaudis for the latter, conducted the negotiations with Don Felipe de Arana, the minister of foreign affairs of Rosas, but without result, and hostilities were commenced by the allied fleets in August. They blockaded Buenos Ayres, and took possession of the peninsula of Martin Garcia, above it, but met with some severe reverses on land. The next year their fleets were withdrawn, the support of the Oriental republic being left in the hands of Brazil, which had taken sides with the Rivera faction against the Argentine confederation. This war occupied Rosas for many years, while the opposition party in his own state was gradually becoming too powerful for him. This party was, as had become too common in these states, now armed and acting in conjunction with the natural enemy, and at the battle

of Monte Caseros, Feb. 3, 1852, Rosas was defeated by the united forces of Brazil, the Oriental republic, Paraguay, and Urquiza the leader of his own opposition. Rosas escaped to England. By a convention of the representatives of the different states and powers held at St. Nicholas, May 31, 1852, the chief power was given to Vincente Lopez as provisional governor of the province of Buenos Ayres. But on the 28d of the next month, by a sudden *coup d'état*, having the army at his disposal, Urquiza put himself at the head of the government as dictator, not 5 months after the deposition of the last. The first use of his power was to acknowledge the independence of Paraguay, which was done by treaty June 28, 1852. That independence has since been acknowledged by the United States of North America, France, England, Sardinia, and other states, and has not again been interfered with. He also secured, by treaties, the future free navigation of all the rivers flowing into the La Plata, a wise measure which took effect in the next October, and remains in force to the present day. But this new assumption of dictatorial power produced immediate irritation. It was but a short time since Urquiza had been only a chief of *gauchos*, compelling the proud and refined Buenos Ayreans to tremble before his rude lances, and his continuation in power depended upon his constant presence at the seat of government and head-quarters of the army. In September, he was obliged to leave Buenos Ayres to attend the meeting of the congress at Santa Fé. He had hardly left that city when (Sept. 11, 1852) a revolution showed itself, and Valentine Alsina was chosen governor of Buenos Ayres. To show the sort of patriotism which mingled with these changes, it may be recorded that the new government immediately voted that \$5,000,000 should be paid toward the expenses of those who had created the insurrection. Of this, 3 generals received \$227,000 and 2 majors, \$128,000. But it must be recollected that from the depreciation of the currency, these sums are quite nominal. The province, with this government, determined to maintain itself as a state independent of the confederation, and another revolution, which changed the governor temporarily, in the month of December, did not alter this purpose. The congress of the confederation did not assemble until November 20, all the states being then represented except Buenos Ayres, and Urquiza was instructed to suppress the rebellion in that state. It met again Jan. 22, 1853, and went on with the work of forming a constitution. It also recommended the president to take all means to stop the civil war and bring Buenos Ayres back to the confederacy. For this purpose an armistice was agreed upon, and a project for a treaty of peace signed early in March, but this fell through from constitutional scruples of Urquiza, founded on the convention of San Nicholas, and the war was renewed and Buenos Ayres blockaded.—The new constitution of the confederation, and that which

is still in force (1857), was promulgated May 1, 1853. It was framed in the hope and apparent expectation that Buenos Ayres, the richest and most important, as the only maritime state of the confederacy, might be induced to return to it, and fixed that city as the capital. The constitution, in its general features, resembles that of the United States of North America, as being a federal government of independent states. It guarantees the free navigation of the rivers, and provides that there shall be no duties on goods carried from province to province; grants to foreigners all civil rights; provides for their naturalization after 10 years' residence—which term may be abridged in the discretion of congress—and makes other provisions for the encouragement of immigration. It went into effect at the end of the year. Urquiza was chosen president for 6 years from March 5, 1854. The seat of government was established at Bajada del Parana, in the province of Entre Rios. Meantime, in Buenos Ayres, a new constitution had also been formed in January of the same year, but not without a hope expressed, and provision made, for a future return to the confederation. This, at one time not long after, seemed probable. That province was invaded by a party of filibusters under one Costa, and Urquiza was suspected, or at least accused, of having fostered this movement. This he promptly denied, and sent his forces to help to repel them. This friendly act failed to bring about an entire reconciliation, but 2 treaties of peace and good will between the parties were the result, signed at Buenos Ayres Dec. 20, 1854, and Parana Jan. 8, 1855. They provide for independent governments, but contain stipulations for much mutual assistance. Each guarantees the other against the dismemberment of its territory; they agree to unite in case of foreign peril; former general laws are to remain in force in civil cases, and criminal cases not of a political nature; they are to give each other mutual aid against Indians; no renewal of passport to be required in crossing the frontiers; the vessels of war of both nations are to carry the national banner; neither shall levy duties on the productions of the other. Urquiza continues (1857) president of the Argentine confederation, and Pastor Obligado has just been reelected governor of Buenos Ayres, for a term of 5 years. But the constitutions of both having been prepared with a view of reunion, much effort has been made for that purpose. But while all steps toward it have thus far failed, and while the interests of the country more and more demand it, the passions of public men in both states make it more and more difficult. Upon the unanimous request of the congress of the confederation, negotiations were reopened on the subject Oct. 10, 1855, and M. Juan Bautista Pena was sent to Parana for the purpose. But it afterward transpired that his authority only extended to making some modification of the existing treaties, and not to merging the 2 sovereignties. This fact becoming public, produced much irri-

tation in the confederation, at the same time that another event produced an equally angry feeling at Buenos Ayres. On Dec. 24, 1855, some Argentine refugees from Montevideo, under the lead of Gen. Flores, embarked at Santa Fé, in the territory of the confederation (indeed, just opposite the capital), to invade the province of Buenos Ayres. Gen. Mitre easily beat them back, and in his turn invaded the province of Santa Fé, in which step he was sustained by his government. Upon this, not only was the mission of Pena closed, but the Argentine government signified to him (March 18, 1856), that the treaties of Dec. 20, 1854, and Jan. 8, 1855, were annulled. In his message of the ensuing May, Urquiza said to his congress, that peace with Buenos Ayres rested, for the future, "only on the guarantee of the conscience and honor of the national Argentine government." The result has been a war of finance and commerce, injurious not only to the states themselves, but to the foreign nations who were beginning to deal largely with them. On July 19, 1856, the congress at Parana, on the suggestion of government, passed a law establishing differential duties upon all goods brought in by way of Buenos Ayres, which went into effect Feb. 1, 1857. Foreign merchandise coming directly to ports of the confederation will continue to pay the ordinary duties; but if they have touched at Buenos Ayres they will pay double that duty, unless subject to a specific duty, and if they are so, to an additional duty of 80 per cent. upon their value. In this contest Buenos Ayres has the advantage of the habits of trade, of the natural methods of navigation, and of its own business importance. The confederation, on the other hand, represents the larger part of the country, and is considered as the national government by most foreign nations. The principal powers have, however, now, diplomatic agents accredited to both governments. The government of the confederation has strengthened itself by treaties of amity and commercial reciprocity with Brazil, England, and the United States of North America, and one with Chili, intended to develop a commerce across the Andes, by free trade across that frontier; and the independence of Paraguay and the Oriental republic has been again recognized and guaranteed. The government is seeking to encourage immigration, and foster large enterprises. Attempts at colonization are making at Corrientes and Santa Fé, roads have been built, and the reconnaissance has been made for a railroad from Rosario to Cordova. The Paraguay has been explored by Capt. Page, of the United States navy, in the steamer *Water Witch* as far as Mato Grosso, in Brazil; the Salado, by the same officer in the *Yerva*, for 120 leagues above Santa Fé, and the Vermejo was navigated for the first time, almost from its mountain source to Corrientes, by Mr. Hickman, another American, in 1855. There is also much activity in the province of Buenos Ayres. Immigration is increasing, and great efforts are

making to encourage it by grants of land and the formation of new villages. A railroad is planned from the city toward San José de Flores, to the westward. A company has been formed within a year to light the city with gas. For the year 1854, 781 ships, measuring 175,856 tons, were entered inward, and about the same number cleared. The exportations for that year, of the products of the country, were valued at \$14,571,256.—We have already mentioned the general position of the states which have formed, or now form, the Argentine confederation, and have given their names as they group themselves upon the map of the country. We now give a list of them in alphabetical order, with an approximate statement of the population of each, in 1855. Buenos Ayres, 400,000; Catamarca, 45,000; Cordova, 90,000; Corrientes, 45,000; Entre Rios, 50,000; Mendoza, 40,000; Rioja, 20,000; Salta, 55,000; San Juan de la Frontera, 25,000; San Luis, 25,000; Santa Fé, 20,000; Santiago del Estero, 48,000; Tucuman, 60,000. These estimates probably include, in some instances, the nomadic Indians, who, although not hostile, are hardly to be considered citizens of the several states, and in some instances do not include them.—These states, covering an area larger than that of Great Britain, France, and Spain, united, embracing every variety of soil and temperature, traversed by rivers navigable from the spurs of the Andes to the shores of the Atlantic, are thus, it will be seen, occupied by a little more than 1,000,000 of people. The productions and occupations of the country are, however, varied, because of the variety of situation and capacity. Cattle form the most valuable property, and immense numbers of them are kept upon the large breeding estates, or range amid the luxuriant pasturage of the plains. Hides, skins, hair, horns, bones, salt meat, and tallow, therefore, furnish a large part of the exports. The number of heads of cattle has been estimated at 4,000,000, and of horses, mules, &c., 2,000,000. Cotton, tobacco, rice, cocoa, sugar, and other productions of tropical countries are raised, with wheat and other grains. The fruits grown are chiefly those of southern Europe, such as the orange, fig, olive, peach, apricot, apple, pear, and grape. Gold and silver are found in the Andes and in the Sierra de Cordova, a series or system of hills in the middle of the southern part of the country; iron and lead exist in small quantities. Coal is said to be plentiful in the south-west, with sulphur, alum, and mineral pitch, near the Andes; but of none of these, are important mines worked. The mountains occupy the western and northern portion of the territory; and the fertile valleys of the rivers which flow from them to unite in the broad estuary of the La Plata, separate most of the remainder of the country into extensive ranges, which are either covered with rich vegetation or made desert, by the efflorescence of salt. The south-western part of the country, which is not connected by rivers with the La Plata, has been very little explored.

ARGENTRE D', a noble family in Brittany, distinguished in Breton annals as early as 1060. Its most celebrated scion was Bertrand, born at Vitré in 1519, died 1590. He became the champion of the feudal rights of the Breton seigneurs against the attempt of Dumoulin to modify the common law of Brittany by introducing the spirit of equality, which breathes through the civil law. D'Argentré was nominated commissioner for the reform of the "custom of Brittany," and instead of relaxing it, voted always to make it stricter. Brittany in this matter resisted the French movement of law reform, just as earlier she had remained Celtic when the rest of France became Roman, and as later she remained monarchical and orthodox, when the rest of France had become republican and atheistical.

ARGIVES, the inhabitants of Argolis or Argos, a Greek province. During the Trojan war the Argives were the most prominent among the Greek tribes. Agamemnon, the chief of the expedition, the most powerful and the richest among the Greeks, was an Argive. For this reason Homer often uses the name of Argives as a generic appellation for all the Greeks, and many other classical writers follow his example.

ARGONAUTS, the name of the earliest heroes of Greek antiquity, who according to the legend, at least half a century previous to the Trojan war, executed the first daring navigation on unknown and dangerous seas. The name comes from the ship Argo, expressly constructed for this purpose, of oak from the Dodonian groves, which had the power of prophecy. Pindar was the first to celebrate the deeds of the Argonauts, but other poets, as Apollodorus, Apollonius of Rhodes, a pseudo-Orpheus, Onomacritus, and the Roman, Valerius Flaccus, treated the same subject. On this account the legend is variously explained and has different features. The story more generally accepted is the following: Jason, the son of Æson, was ordered by Pelias, his uncle, sovereign of Iolcus, in Thessaly, to reconquer and bring back the golden fleece of a ram on which Phrixus and Helle ran away, and which fleece was nailed by Phrixus to an oak in the grove of Ares (Mars), and watched by a sleepless dragon. Jason intrusted Argos, the son of Phrixus, with the duty of constructing a 50-oared ship named after the builder, and invited all the heroes of Greece to join him in the adventure. Orpheus, Castor and Pollux, Theseus, Hercules, and many others, 60 in number, answered the appeal. The Argonauts landed first in Lemnos, where they stayed 2 years. The Lemnian women detained them so long, having previously killed all their own men, for their having offended Aphrodite (Venus). From Lemnos the Argonauts went to the Dolians, by whom they were first hospitably received, but being afterward taken for Pelasgians, they were attacked and in the naval strife which followed Jason killed the Dolian prince. Then they landed in

Mysia, where Hercules and Polyphemus were left on account of their remaining behind in search of Hylas, who had been carried away by a nymph. In the land of the Bebryces they were challenged by the king Amycus, to a boxing contest, and the challenger was slain by Pollux. Then the wind drove them to the shores of Thrace, to Salmydessus, where they asked the advice of the seer Phineus, how to pass between the Symplegades or the swimming rocks of the *Ægean*, which crushed every thing in their way. By the advice of Phineus the Argonauts let loose a dove, which coming between the rocks lost only her tail, while the Argo, piloted by Hera (Juno), suffered only a slight damage in the stern. From this moment the Symplegades never moved. Thence continuing the exploration of various lands, the navigators finally reached by night the mouth of the Phasis in Colchia, the goal of their expedition. *Æetes*, the king of the country, promised the fleece to Jason, but under the condition that the hero should yoke to a plough 2 fire-breathing iron-footed bulls—a gift of Hephaestus (Vulcan), and sow the teeth of a dragon left by Cadmus in Thebes. Medea, daughter of *Æetes*, and a powerful witch, fell violently in love with Jason, and he promising marriage, she taught him how to overcome the dangers, and gave him a charm against fire and steel. Advised by her he threw a stone among the warriors who sprang up from the teeth of the dragon, and who being thus enraged killed each other. After this deed was accomplished, *Æetes* wishing to evade his promise, intended to burn the Argo and to kill the heroic crew. Medea told Jason of it, who ran to the grove, seized the fleece, the sleepless dragon having been lulled by Medea. Then with his par amour and her brother Apsyrtus, Jason sailed off by night. *Æetes* chased them, and Medea killed her brother and threw the chopped limbs one after the other into the sea; the father gathered them up, and was thus prevented from reaching the fugitives. The Argonauts entered the river Eridanus, but lost their way in a storm. The Dodonian mast of the Argo told them that the storm was sent by Zeus, and that the wrath of the god would continue until they should sail to Ausonia (Italy) and be absolved by Circe. They coasted Liguria, the land of the Celts, and through the sea of Sardinia arrived at the Tyrrhenian shores and along them to the island of Circe. Having fulfilled the stonement, they left and coasted near the islands of the Sirens, from whose enticements they were preserved by the songs of Orpheus; then they passed between Scylla and Charybdis helped by the goddess Thetis, and arrived at the island of Ocoyra. Then they were overtaken by a storm, and saved by Apollo, who, amid lightnings, pointed to them the island Anaphe, the modern Nanfi. In Crete, Talos, the giant, tried to prevent their landing, but Medea despatched him. Thence they went to *Ægina*, and passing between Euboea and Locris

finally reached Iolcus. This voyage on their return lasted 4 months. The Argo was consecrated by Jason on the Isthmus of Corinth to Poseidon (Neptune). So ended the expedition through the Black and Mediterranean seas, the first recorded in the heroico-historical legends of Europe.

ARGONNE, FOREST or, the former name of a region comprised in the department of Meuse and Ardennes, France. It forms a plateau, partly wooded, and lies between the basins of the Aisne and Meuse.

ARGOON, a river of Tartary, which rises from Dalai lake or Kaulon-nor, situated in long. 119° 14' E. and lat. 49° N. It forms the boundary between the Chinese and Russian empires. This river is thought to be the original source of the Amoor.

ARGOS, or ARGOLIS, is the north-eastern part of the Morean peninsula, between the bay of Nauplia and *Ægina*. The eastern continuation of the northern mountain range of the Peloponnesus surrounds, as with ramparts, a part of the inhabited shores, which bear marks of volcanic convulsions, and the plain of Argos, which is fertile, but rendered unhealthy by marshes. The most eminent mountainous groups are the Malevo, called by the ancients Artemision, 5,484 ft.; the Hag-Ilias, very anciently called the Arachnasion, 3,676 ft.; and the Didyma, 3,800 ft. The largest plain is situated near the city Argos, behind the bay of Nauplia, watered by the river Planitza, the classical Inachus. Only a few other spots are fit for agriculture, on account of the want of water, as all the streams except the Inachus and the Erasinus, now called Kephalaria, dry up. But the many bays render Argos favorable for navigation. In antiquity Argos, or Argolissa, was strictly the plain surrounded on the west by the Arcadian mountains, and on the north by those of Phleias, Oleona, and Corinth. In the Roman epoch Argos represented the eastern part of Peloponnesus, bounded on the north by Achaia and Corinth, on the north-east by the Saronian bay, on the west by Arcadia, on the south by Laconia, and on the south-west by the bay of Argolis. Argos belongs to the earliest cultivated regions in ancient Greece. Inachus (1800 B. C.) and Danaus (1800) landed from Egypt and settled in Argos. Here ruled Pelops, who gave his name to the peninsula, and, in various single states, his descendants, Atreus, Agamemnon, Adrastus, Eurystheus, Diomedes, heroes of the primitive legend. In Argos was born Heracles, or Hercules; here, near the marshes of Lerna, he killed the hydra, in the cavern of Nemea he strangled the lion. From the remotest times Argolis was divided into the smaller kingdoms of Argos, Mycenæ, Tiryns, Træzene, Hermione, and Epidaurus, which all afterward formed republics. After the emancipation of Greece from the Turkish sway, until the year 1838, Argos formed one of the 7 departments into which the Morea was divided. Argolis, or Argos, now forms a

government of the kingdom, with about 90,000 inhabitants, Spezzia and Hermione being subordinate provinces. Nauplia is the capital. The ancient city of Argos has preserved its name from the remotest to the present times. The inhabitants have been celebrated for their love of music, and within its walls, as well as in Delphi, were statues to the brothers Biton and Cleobis, renowned in the classical world for having sacrificed their lives for their mother. The city suffered much in its capture by the Venetians, in 1686, and its recapture by the Turks, in 1706.

ARGOT, the general name for the modes of expression current among criminals and outcasts in France. The etymology of the word is surrounded with the same darkness which hovers around the class who inaugurated its use. There has at all times existed a most lamentable freemasonry among the adepts of vice, and in all countries we find them induced to adopt a fictitious language as a fit exponent of their thoughts, and as a prudential measure for the purpose of escaping detection. The English vocabulary has no special name for such dialects, but characterizes it by the general term of thieves' Latin, slang, &c. In Italy rogues use the so-called Fourbesh languages, of which several vocabularies exist, among others, various editions of the *Nuovo Modo da Intendere la Lingua Zerga*, cioè *parlar Furbesco*. In Spain the criminal language wears the name of *Germania*, from the Latin *Germanus*, and several words of it having been used in "Don Quixote," as well as in another of Cervantes' novels, entitled *Binconete y Cortadillo*, and in various other works, a Spanish amateur of Argot, Juan Hidalgo, compiled a book upon the subject, which passed through 6 editions, the first appearing in 1609, under the title of *Romances de Germania de Varios Autores, con su Vocabulario*, &c. In Portugal a novel appeared in 1844—*Frei Paulo, ou os Dois Misterios*—written by a member of the Lisbon academy, Corvo de Camoes, in concert with other Portuguese men of letters, in which a great number of words of the *Calao* (this being the name for the language in vogue among Portuguese criminals) are introduced. In Germany the name of the language is *Rothwälsch*, composed of low, high, Jew, and Gypsy German, but possessing a grammar and almost a literature of its own. One of the earliest and most curious books on the subject, *Von den Falschen Bettlern und ihrer Büberrey*, was brought out at Wittenberg, in 1528, with a preface written by no less a personage than Martin Luther. In Holland the name of the language is *Bargoena*, or *Dicentaal*. In Scandinavia we find, beside the *Fantasplog*, or Argot language, which is spoken of in Sund's work, published at Christiania in 1860, *Om Fante-eller Landstrygerfolkets y Norge*, the *Tatersproget*, or gypsy gibberish, and the *Skivtersproget*, or the jargon of vagabonds, much in vogue among the rascals of Norway, Sweden, and Denmark. The Berlin

prostitutes have adopted a language of their own, as is the case with the same class of persons generally, especially the Egyptian Cyprians, known under the name of *Ghousas*. Among the German Jews a mysterious language is frequently resorted to, but more for playful than for criminal purposes, which is called *Erbsenprache*. The Jews generally patronize miscellaneous gibberish, and in the dark corners of the ghetti Jew Argot languages exist, although Hebrew genius has hitherto neglected to publish dictionaries and encyclopedias of the same. In Albania an Argot language is spoken which presents a singular compound of modern Greek, Wallachian, Italian, Latin, with a slight dash of original invention, and which is chiefly used by quack doctors, the fictitious verb expressive of exercise of the medical profession (which in these regions is not in the best hands), *karakhan*(ur, being synonymous with cheating. Asiatic criminals and outlaws speak the *Balaibalan*, a fictitious language bearing some resemblance to the Arab, Persian, and Turkish vocabularies, and a cue to which is to be found in Silvestre de Sacy's essays on the subject, in *Notices et extraits des manuscrits* (vol. ix. pp. 365-396), and in the *Journal Asiatique* (1822, vol. i. p. 141). The Indian Thugs speak the Ramaseena language, a vocabulary and history of which appeared at Calcutta in 1836, while a book published on the Thugs in the ensuing year by Wm. Allen and Co., of London, is calculated to throw further light upon the same subject. These are the only two Asiatic languages of the kind of which we have historical evidence, although many others are supposed to exist.—Though criminals resort to fictitious languages in all countries, nowhere has this propensity reached the artistic perfection to which it has attained in France. The Argot language of the worthless characters of France has unfortunately found a very conspicuous place in modern French novels, especially in Eugène Sue's *Mystères de Paris*. Indeed, the novel-reading public found it so difficult to unravel the language used by Sue's chief characters, as *le chourineur*, *le maître d'école*, and *la chouette*, that it became necessary to publish a *Dictionnaire complet de l'Argot employé dans les Mystères de Paris*, which is to be found in all the book-stores of Paris. Victor Hugo, in his *Dernier jour d'un condamné*, narrating the impression produced upon his mind by a young girl who sings a song in the Argot language, says: "Je ne saurais rendre ce que j'éprouvais; j'étais à la fois blessé et caressé. Le patois de la cave et du baigne, cette langue ensanglantée et grotesque, ce hideux Argot, marié à une voix de jeune fille, gracieuse transition d'une voix d'enfant à une voix de femme! tous ces mots difformes et mal faits, chantés, cadencés, parlés!"—"I could hardly express my sensations; I felt shocked and pleased at the same time. Think of the jargon of the bar-room and the galley, of this bloody and grotesque language, of this hideous Argot, wedded to the voice of a young

girl, a voice in its graceful state of transition from childhood to womanhood! all these mutilated, ungainly, clumsy words, clothed, as it were, with the charm of song, music, and harmony." In the Argot language the ludicrous goes hand in hand with the terrible, and the picturesque with the criminal. So we find the word *tire-monde* used in the sense of a *sage-femme*, *moucharde* and *cafarde* for the moon, *philosophes* for cheap shoes, *palpitant* for heart, *la carline* for death, *sorgus* for night, *cuisine* for police, *oufrage* for theft, *travailler* for stealing, *étourdir* for murdering, *le courrier de Haute-Mont*, *Haere*, *le grand Haere*, and *Mec des Mec* for God, *entiffier* for marrying, *entonne* for church, *esbasir* or *embre* for assassinating, *Goddem* or *Rosbif* for Englishman, *minuit* for negro, *orient* for gold, *mère Thomas* for a broken stool, *épouser la souse* for being hanged, &c., all these words being more or less susceptible of etymological explanations and illustrations. The last-named, for instance, is taken from one of the religious plays of the 15th century representing the crucifixion, in which the two thieves on their way to the cross are addressed by Orillart as follows:

Le beau gibet *espouserie*,
Pour estre de nepos tous troya.

The beautiful gallows you shall espouse,
And there we three will pay our vows.

So, too, *Guillaume*, brown bread, is said to refer to an actor of that name who was formerly a baker, and who, when subsequently embodying the character of a baker upon the stage, irresistibly reminded the spectator of brown bread. The whole Argot vocabulary is made up of such humorously or fantastically concocted words, scattered over the grotesque, satirical, and erotic literature of former times, or borrowed from the gypsy or kindred languages of other nations. In 1827 a dictionary of Argot, written by *un monsieur comme il faut et ex-pensionnaire de Sainte-Pélagie*, was published at Paris. But the prosperity of Argot literature dates more particularly from 1828, when Maurice and l'Héritier (de l'Ain) brought out the *Mémoires de Vidocq*, founded upon data furnished by that noted functionary himself, who, until 1827, filled the office of *chef de la police de sûreté*, and who was, of all men in Paris, the best authority upon the subject. In 1827 appeared his work on thieves, containing the Argot dictionary which he had begun in 1819, at the request of the prefect of police. It was this publication of Vidocq's dictionaries and revelations which gave such a remarkable impulse to the Argot literature. Since then various other works upon the Argot language have been published, of which Michel's *Études de philologie comparée sur l'Argot, développement d'un mémoire couronné par l'Institut de France*, published in 1856, by Didot, at Paris, is the most valuable.

ARGOUT, ANTOINE MAURICE APOLLINAIRE, comte d', a lucky French statesman and financier, born in 1792 in the department of Isère.

When scarcely 20, he entered the treasury department, where he was promoted from office to office during the empire. From 1812 to 1814 he acted as general superintendent of the navigation of the Rhine. On the restoration of the Bourbons, he did not hesitate to abandon his former master for a new one, and by great zeal rapidly rose to posts of eminence. As early as 1815 he was appointed master of requests to the council of state, and prefect of Basses Pyrenées; in 1817 he was transferred to the more important prefecture of Gard; Jan. 1819, he became a councillor of state in ordinary service, and in March following a peer of France. When the revolution of 1830 broke out, he interfered and tried to prevent the effusion of blood; on the 28th of July, in concert with Semonville, the grand referendary to the chamber of peers, he repaired to the chateau of St. Cloud, where Charles X. then was, to obtain the recall of the ordinances, which were the direct cause of insurrection. Their mission was successful; but when they brought the happy result to Paris, Gen. Lafayette answered: "It is too late," and the terms which they had to offer were not even entertained. D'Argout, who had no taste for fallen fortunes, quickly went over to the new government, and was even more favorably treated by the Orleans king than he had been by the Bourbon, as may be seen by the following list of his promotions to office: secretary of the navy in 1830, secretary of commerce and the public works in 1831, home secretary in 1838, governor of the bank of France in 1834, secretary of the treasury in 1836, then again in the same year governor of the bank. The revolutionary government of February did not even think of his removal, and Louis Napoleon maintained him in his post until July, 1857, when he withdrew. He was created a senator by a decree of Jan. 16, 1852.

ARGUELLES, AGUERIN, Spanish statesman, born at La-Riba-de-Sella, in Asturia, in 1776, died March 23, 1844. He was sent on a mission to Portugal, and soon after to London on special business. On his return from England he joined the patriots in their efforts against the French, and became a member of the cortes of Cadix. His employment in foreign affairs by the government and the liberal tenets which he professed, won him the confidence of his party, and he was one of the committee charged with the preparation of the new constitution, which under the title of the constitution of 1812, reduced the kingly power to the very narrowest limits, rescued the ancient municipal government of the provinces and towns, and gave ample representative rights to the people. After Ferdinand VII. was restored, this constitution was abrogated in May, 1814. Arguelles was seized and thrown into prison, and finally sentenced to 10 years exile in Ceuta. Here he made himself friends, and the government, alarmed at his growing popularity, imprisoned him in the Balearic island of Cabrera. When the revolution of 1820 broke out, his partisans

forced the king to accept Arguelles as minister of the interior. But he had not practical knowledge and the business capacity which fit men for power. He was obliged to resign, and took his place in the cortes as leader of the moderate party. When Ferdinand at last restored the most absolute despotism, Arguelles fled to England, where he remained until he was recalled in 1838 by the regent Christina. In the cortes he exercised all his powers against the government party until the accession of Mendizabal to power, when he joined him with the expectation of restoring the constitution of 1812. In 1838 he was appointed a member of the council of regency after the exile of Queen Christina. In 1837 the queen appointed him a member of the senate. In 1841, on the motion for the sale of ecclesiastical lands, he warmly opposed any compromise with Rome. He was appointed tutor to Isabella and her sister, a post which he retained until 1848. He died of a fit of apoplexy. He must not be confounded with José CANGA ARGUELLES, another Spanish statesman of the present century.

ARGUIN, an island 8 miles from the west coast of Africa, lat. 20° 27' N. long. 16° 37' W. Its surface is composed of white rock and drifting sand, and it furnishes excellent water. The bank of Arguin extends from Cape Blanco to Cape Mirik, west coast of Africa.—Also a town of Western Africa, on the coast S. E. of Cape Blanco.

ARGURI, formerly a large and beautiful village in Russian Armenia, 186 miles S. from Tiflis, on the N. E. slope of Mount Ararat, 5,400 feet above the level of the sea. The inhabitants, about 1,600 in number, supported themselves by rearing horses and growing corn, and also by cultivating the vine, which, according to a local tradition, was first planted there by Noah when he left the ark. A little distance from Arguri, up the mountain, was the monastery of St. James, the residence of Parrot and his companions during their exploration of the mountain. In 1840 the monastery and the village were entirely overwhelmed by an eruption of Ararat, and of all the inhabitants and monks, numbering nearly 2,000 persons, only 114 who were engaged in the fields escaped. Since then the wells and fountains in the vicinity have sent forth only a discolored and sulphureous water.

ARGUS, a creature of ancient mythology, said to have had a hundred eyes, or, as others say, eyes all over his body, of which only 2 slept at once. He was set by Juno to watch the priestess Io transformed into a white cow. He was lulled to sleep by Mercury, who played soothing tunes on the pipe of Pan, and then slew him with his crooked sword.

ARGYLE, DUKE or, head of the great Scottish clan of Campbell, of nearly the oldest Celtic descent in the Highlands. His patronymic, Mac-alain-Mor, the son of Allan the Great, corrupted into Macallum More, is the favorite title of the Highlanders for their chief-

tain, and has been more valued by the possessors than the hereditary title which belongs to the head of the house. The greater part of the county of the same name, bounded on the south by the Irish sea and the frith of Clyde, including the wild districts of Ardnamurchan and Morven, the isles of Mull, Jura, Islay, Buta, and Colonsay, and containing some of the most magnificent scenery of the western Highlands, formerly belonged to this powerful and wealthy clan, the principal residence of its chief being Argyle castle, at Inverary, the scene of some of the most romantic incidents in Sir Walter Scott's "Legend of Montrose." Several of the chiefs of this house were men of considerable abilities, and played remarkable parts during the stormy political periods of the 16th and 17th centuries. One earl of Argyle, in the reign of Queen Mary of Scotland, having joined the association of reformers, known as the congregation of the Lord, was involved in conspiracies against the queen, and forced to fly to England, for the preservation of his life, but was subsequently invited to return by Darnley, and was reconciled to the queen. His family always continued to be energetic reformers, and were invariably hostile to the house of Stuart, which enmity was maintained and exaggerated by the fact that the royal family of Scotland was strenuously supported by the noble house of Graham, and its chief, the duke of Montrose, the feudal and hereditary opponents of the Campbells. In the year 1689, Archibald, the then earl of Argyle, "a man," according to Hume, "equally supple and inflexible, cautious and determined, and entirely qualified to make a figure during a factious and turbulent period," embraced the covenant, became one of the chief leaders of that party, and the head of the Scottish malcontents. He was a man of great political audacity, coolness, resource, and intrepidity, but of no military skill, or even courage. In the campaign of Montrose, in the western Highlands, he was not only baffled, out-maneuvred, and defeated by that able and gallant partisan, but deserted his army, and incurred strong imputations of cowardice, from which his character is only redeemed by the dignity and firmness with which he afterward met his death on the scaffold. When Montrose was at last overpowered by his enemies, and put to death, with every indignity and insult which political malignity and religious intolerance could devise, it is said that Argyle had the cruelty and ungenerous brutality to triumph openly at the downfall of his personal as well as political foe, and the window is still shown, out of which he is said to have gazed complacently on the passage of the rabble rout, by which the noble cavalier was conveyed, bound ignominiously with ropes, in a common cart, with the executioner riding before him, to the place of execution. When Charles II. was in Scotland, with the army of the covenant, which had then joined his cause against the parliament, although Argyle went with his party, he

never had any real intimacy with the king, and though nominally employed as his principal gentleman in attendance, in reality held Charles nearly as a prisoner, until disgusted with the indignities, and annoyed beyond endurance by the formalities to which he was subjected, the king endeavored to escape from the state of semi-captivity in which he was held.—After the defeat of the royalists at Worcester, and the capture of Stirling castle, Dundee, Dumfries, and all the fortified places in Scotland, by Gen. Monk, Argyle gave in his submission to the parliament, and Scotland was at length reduced to total subjection. On the return of Charles II., and the restoration of the crown to the house of Stuart, Argyle was brought to trial, in spite of two several acts of indemnity, either of which really formed invincible obstacles to any legal conviction of this nobleman for any of his overt offences, so that he was tried only for compliance with the usurpation of Cromwell, and the commonwealth, a crime of which, if it were a crime, as Hume has well remarked, the whole nation was equally guilty with himself, and which no degree of loyalty could have prevented him from committing, since he had no option but to obey a force which he had no means of resisting. In spite of this, however, he was convicted, sentenced, and executed, and the ungenerous cruelty of his conduct toward the noble and unfortunate Montrose, prevented him from receiving the sympathy which he would otherwise have met, and to which the calm and dignified fortitude with which he encountered his death surely entitled him. The son of this nobleman, who, when Lord Lorne, during the life of his father, had been distinguished by his loyalty, and who having never swerved from the royal party, had escaped the forfeiture of his estates for his father's treason, early in the ensuing reign, in his strenuous support of the Protestant ascendancy, and his opposition to the exemption of princes of the blood royal from taking the test-oath, gave such mortal offence to the duke of York, afterward James II., that in consequence of that prince's influence with his weak and easy brother, Argyle was put on his trial for high treason, leasing-making, and perjury, and was condemned and sentenced to death, without a semblance of cause, or any evidence against him, for innocent words spoken in debate. The king, however, caused the sentence to be recorded, and the execution of it to be suspended until further orders. Not having, however, any confidence in this seeming clemency, Argyle escaped to Holland, where he kept himself concealed, and in retirement, until after the accession of James II., and his intolerant and illegal measures in endeavoring to overthrow the Protestant institutions of England, and establish on their wreck the long-proscribed church of Rome, when, in conjunction with the duke of Monmouth, a natural son of Charles, he returned in an evil hour to England, and set up the banner of rebellion in his native land, while Mon-

mouth was engaged in the fatal rising of the west of England, which terminated so disastrously in the total defeat of Sedgemoor, and in the barbarous and bloody executions which followed it. Argyle had not even the temporary show of success, which gleamed at first on the banners of Monmouth, for he was defeated and taken prisoner within a few days of landing; and with his stubborn Protestantism, and the personal hostility which the cruel, inflexible, and narrow-minded man, who then sat on the throne of England, bore to him, it was, of course, out of the question that he should escape the same sentence which was so rigorously executed by James on his own brother's son. The marquis of Argyle died, as his father had done before him, with dignity, and without a tremor, and with his death the disloyalty of this noble family came to an end, for since the exclusion of the Stuarts from the succession to the English crown, the heads of the clan Campbell have been as much celebrated for their faith to their princes, as for their high spirit, and their ardent love of their country.—**GEORGE JOHN DOUGLAS**, 8th duke of Argyle, born April 30, 1823, succeeded to the title April 26, 1847. At an early age he acquired some celebrity by writing a "Letter to the Peers, from a Peer's son," on the free church question. It is asserted that in the hour of trial he failed to carry out the principles therein avowed. In 1848 he wrote an anti-Roman Catholic work, entitled "Presbytery Examined." In July, 1844, he married the Lady Constance Gower, daughter of the duke of Sutherland, whose vast Scotch estates adjoin his own. In consequence of his great landed influence, and the active part he took in political matters, he soon acquired a position, and became, as postmaster general, a member of the cabinet in the Palmerston ministry.

ARGYLESIRE, a western county of Scotland, comprising about 2,000,000 acres or one-tenth of the surface of Scotland. It is remarkable for its picturesque character rather than for cultivation or populousness. The population indeed is perhaps the lowest in the British isles, not exceeding 32 to the square mile; nor is there any probability of considerable increase, for the policy of the great land owners of that district has been to remove the tenantry, and to create extensive sheep-walks. This policy has been the subject of considerable reprobation, and it has been epigrammatically alleged that the man has been removed for the sake of the brute. The peculiar character of the Highlander, his fixed attachment to the habits of his ancestors, his incurable aversion to that every-day labor which can alone improve his position, and the worthlessness of the land for any purpose of agriculture, have been the defences of the landlords, who, it cannot be denied, have expended large sums of money in promoting the emigration of their tenantry. The mountain district of Argyleshire contains Cruachan Ben, rising to the height of 3,669 feet, with many other lofty

hills dear to Scottish hearts, and celebrated in national poetry. The largest of the inland lakes is Loch Awe. The mountains are chiefly of granitic formation. Argyleshire is not rich in mineral resources. Lead, copper, and coal are worked, but not in very great quantities. The raising of cattle and sheep is carried on with great success. The moors yield abundance of game, grouse, ptarmigan, and black cock, while the noble red deer yet courses the wastes of his native hills in freedom. The proprietorship of this large county is in few hands. The duke of Argyle, the marquis of Tweeddale, and the marquis of Breadalbane, are the chief landowners. The dukes of Argyle could once bring 8,000 or 4,000 men into the field; but although their feudal influence may have declined, the value of their property cannot but be proportionably increased. There are various natural curiosities in Argyleshire, the most remarkable being the columns and cave of Staffa. The most important modern structure is Inverary castle, the family seat of the dukes of Argyle, built of a peculiar stone called *lapis ollaris*, a local production, being a kind of micaceous slate. Dunstaffnage castle is an interesting ruin. Gaelic is still generally spoken in Argyleshire, although of late years the English language is better understood, and is gradually superseding the Gaelic.

ARGYRAMMOS, **ALEXANDROS**, a modern Greek, born 1810, who out of zeal for his native tongue, became a printer, in order to publish at Constantinople the vast Greek lexicon, known by the name of *Kisuros*. The 1st volume, containing the first 4 letters, appeared in 1819. During the war of Greek independence he was unable to procure types from western Europe, and he established at Constantinople a type-foundry for the sole use of the lexicon.

ARGYRO KASTRO, a chief town of Albania, on the river Deropul, an affluent of the Boioussa. It is built on the side of a mountain, and the streets are so steep that persons on horseback are obliged to dismount. The streets are separated by ravines, planted with gardens. There is a strong castle which was enlarged by Ali Pasha, and has accommodation for 5,000 men. The population is about 10,000.

ARGYROPULUS, **JOHANNES**, one of the principal revivers of Greek learning in the 15th century, born at Constantinople, died at Rome, where he held a professorship of philosophy in 1486. In 1484 he came to Italy, acquired the favor of Cosmo de' Medici, and was the instructor in Greek of his son and grandson. In 1480 he removed to Rome. His principal works are some Latin translations of Aristotle. He was strongly prejudiced against the Latin writers, and declared Cicero to have been alike ignorant of Greek and of philosophy.

ARIADNE, according to Homer, daughter of Minos, king of Crete, and of Pasiphaë. When Theseus landed at Crete with the tribute of the Athenians for the Minotaur, Ariadne fell in love with him, and gave him a clew of thread

by means of which he found his way out of the labyrinth. Theseus offered her his hand, in token of his gratitude. Ariadne eloped with him, but as they arrived upon the island of Naxos, they were killed by the arrows of Artemis. According to the common tradition, Theseus abandoned her upon the island of Naxos, when Bacchus married her, and after her death transferred the crown which he had given her at their wedding, to the stars. The incidents in the life of Ariadne have been fruitful themes for the fine arts.

ARIALDUS, a deacon and martyr of the church of Milan, born in the village of Euzago, between Como and Milan, in the first half of the 11th century, died at Milan, June 28, 1066. He followed from childhood the bent given him by a religious education, adopted the ecclesiastical profession, and made his first appearance in Milan in 1056. This was the age of Hildebrand, when that mighty promoter of the papacy, though not yet occupying the chair of St. Peter, was laboring strenuously for the reformation of the clergy, the suppression of simony and corruption among ecclesiastics. The church of Milan, mindful of its ancient dignity under St. Ambrose, asserted a sort of independence, and was not inclined to submit to the new discipline. The practice of simony had there reached such an extreme that for every spiritual office a sum was openly paid proportionate to its value, the archbishop Guido himself having obtained his office in this way; and by this traffic many unworthy men had arrived at important stations in the church. Arialdus, who had always led a pious and strictly moral life in his own country village, was scandalized at the immoralities and worldly life of the clergy of Milan, and began to preach to them repentance. They repelled him with contempt, and he then directed his preaching to the laity. He set in opposition to the worldly pride and the illicit connections of the present ecclesiastics, the example of Christ and the idea of a clergy appointed to follow Christ in poverty, purity, and humility. The piety of the young clergyman was so earnest, and his convictions so just, that his discourses were favorably received by the multitude, and the clergy, who by reason of the reverence felt for their office, had hitherto been regarded with respect in spite of their personal unworthiness, gradually became objects of popular contempt and abhorrence. Meantime Arialdus had found an associate in Landulphus, a young man of one of the noblest families of Milan, and a more vehement and popular speaker even than Arialdus. These two preached together throughout the city, exhorting the people to shun all intercourse with the corrupt clergy, and even to refuse the sacraments from them. The whole population of Milan became divided into two hotly contending parties, both of which lodged complaints with Pope Nicholas II. The latter sent two legates, the learned cardinal Peter Damianus, and the archbishop Anselmo of Lucca, to Milan to investigate the affair, who

convoked a synod there for this purpose. But when Damianus, as legate of the pope, claimed precedence of the archbishop Guido of Milan on public occasions, he offended the pride of the Milanese nobility; and even the populace did not like to see the humiliation of their ancient Ambrosian church. The firmness of Damianus succeeded in enforcing the supremacy of Rome, and the spiritual court proceeded to pronounce judgment. Simony was to be renounced by the clergy, but it having been an almost universal evil in the Milanese church, the penalty should be somewhat mitigated toward so large a multitude of offenders; and pardon for the past was to be had by undergoing due penance. Nothing was done to prevent the offences against virtue and against the ecclesiastical law of celibacy hardly less common than the simoniacal practices, and Arialdus complained at Rome of the continuance of irregularities. The disturbances at Milan were, however, quelled until the death of Nicholas, and the election of Anselmo as new pope under the name of Alexander II., when they broke out again with greater violence. Landulphus had died, and his warlike brother Erlimbaldus, just returned from a pilgrimage to the holy sepulchre, joined himself to Arialdus as a popular leader. They went together to Rome, where Alexander II., having assembled a council in which Hildebrand took the leading part, appointed Erlimbaldus the gonfaloniere or standard-bearer of the universal Roman church, and delivering to him the consecrated banner of St. Peter, bade him unfurl it against the enemies of the church whenever he should find it necessary to resort to other than spiritual weapons. He also gave them a declaration by which the archbishop of Milan was excommunicated. The return of Arialdus and Erlimbaldus thus supported, was the signal for bloody commotions at Milan. The people, fickle in their zeal and passions, were powerfully moved by opposite motives. The eloquence of Arialdus inflamed them against the corruptions of the clergy; the memory of the freedom and dignity of the Ambrosian church made them indignant against the assumptions of Rome. Arialdus continued his exertions, but at last fell a victim to the vengeance of the exasperated aristocratical party, being murdered on a desert island in Lake Maggiore, about 10 years after he had preached his first sermon in Milan. His name was enrolled in the list of martyrs by Pope Alexander II. (See Pope ALEXANDER II.)

ARIANO, a town of Naples, 15 miles N. E. from Benevento. It is built upon a steep hill, in one of the most frequented passes of the Apennines, and many of the poorer dwellings are dug into the rock and earth. It is the see of a suffragan bishop, and contains a fine cathedral, 20 churches and convents, several *monte-de-piété*, and an academy. This town has frequently been visited by terrible earthquakes, the last of which happened in 1782. Pop. 11,718.

ARIANS, the followers of Arius (315). The church had early been content to affirm the

existence of 8 persons in the Trinity, without defining their nature and relations to each other. Alexandria was the natural birthplace of the discussions into which those matters were sure, sooner or later, to come, and of which Sabellianism had already given a half century's warning. Arianism takes its rise as a doctrine, in the reply of Arius to a discourse by Alexander, bishop of Alexandria. The bishop maintained that Christ was not only equal to the Father, but of the same essence. This, Arius affirmed, would lead to Sabellianism, being a virtual denial of the tripersonality of God; he claimed that Christ was equal to the Father in power, but only similar in essence, and generated from the divine will, and that "there was a time when he was not." The council of Nice (325) condemned Arius and his doctrines, banished him to Illyrica, ordered his writings to be burned, and decreed consubstantiation as the orthodox faith. Arianism was at first little more than a protest against Sabellianism, and in favor of the orthodox views of the Trinity. But the subject of the nature and relations of the persons in the Trinity once broached, the Arians soon found no agreement among themselves, and fell into two opposing parties, viz.: the strict Arians, or Heterousians, because they believed Christ to be of another nature or essence from God; and the semi-Arians, or Homoiousians, who believed the Son to be of a nature similar to the Father. Both were included under the general term Anti-Nicene, because they opposed the decree of that council. With various fortunes they contended with each other, and with the orthodox or Nicene party, called Homoousians (because they believed that the nature of Christ was the same as the Father's), for more than 300 years, extending their doctrines into Spain and the German states; however, they do not appear to have extended their influence into Britain, so late as the council of Antioch (368). Arianism was more successful, from various causes, in the eastern than in the western church. It is less important in itself than in the movements to which it has been the occasion. Apollinarius, in order to attain what he deemed a better ground for opposing Arianism, than the orthodox one, denied the humanity of Christ. This gradually forced the Arians progressively to the other extreme of denying his divinity, and so began a movement in theology of which the church has yet to see the consummation. Arianism since the middle of the 16th century, has gradually merged itself into what it had originally no affinity with, viz., Socinianism, and out of that has been slowly evolved Unitarianism. The Arianism of Arius does not now exist. Servetus is said to have revived it in the 16th century, and the same thing has been alleged of Erasmus. Arianism was powerfully opposed by Theodosius I., and finally suppressed by law in the Roman empire under Theodosius II. (428), after having been alternately condemned and decreed by councils of bishops for 107 years.

ARIAS MONTANUS, *Benedictus*, a Spanish ecclesiastic and learned oriental scholar; was born in a village of Estremadura in 1527, and died at Seville in 1598. Philip II. sent him to Antwerp in 1568, to superintend the publication of the magnificent edition of the "Polyglot Bible," to be prepared in that city. The task employed him for 4 years, and he was rewarded with a pension of 2,000 ducats, and some profitable offices. His numerous works are principally theological. He was an unyielding enemy of the Jesuits.

ARICA, a maritime town of Peru, capital of a district of the same name, lat. $18^{\circ} 28' 1''$ S. long. $70^{\circ} 24'$ W. It was formerly the port of shipment for the silver from the famous mines of Potosi. It is still a place of shipment for bullion, and for the trade with Bolivia, of which state it was proposed in 1886 to make Arica the port of entry. It was sacked by Sir Francis Drake in 1572, and has since been much reduced by earthquakes. Population, 3,500; once estimated at 30,000.

ARIEGE, a name common to a river and a department of southern France. The river, rising in the Pyrénées-Orientales, flows northward, and empties into the Garonne, after a course of 90 miles. It was called by the Romans *Aurigera*, from its carrying gold-sand.—The department which derives its name from the river, consists principally of the northern slope of the Pyrenees, and is covered with mountains, which gradually increase as they come nearer to the great chain. It contains valuable iron mines, the ore being in some places auriferous, and large quarries of marble, freestone, plaster, and slate. On the highlands are meadows, where cattle and sheep are raised in large numbers; nowhere in France is the care of merinos better understood. The trade in these sheep and in their wool is considerable. The forests furnish good timber. Bears, wild boars, wolves, foxes, and deer, are abundant. The lowlands are tolerably fertile and well cultivated, producing wheat, rye, oats, maize, millet, hemp, and flax. Vineyards, to the extent of 5,000 acres, yield a wine of inferior quality, all of which is consumed at home. The working of metals is the principal branch of manufacturing industry; but there are beside saw-mills and paper-mills, manufactures of cloth, hosiery, linen, and soap. Pop. 365,907.

ARIEL, a Hebrew name, signifying "Lion of God," i. e. Hero, or city of Heroes, is the name given to various persons in the Old Testament, and also applied to the altar of burnt-offerings, or to the city of Jerusalem, as in Isaiah xxix. 1, 2, 7. Among the Jews of a later period, the name was, in cabalistic parlance, given to a water spirit.—In modern times Shakespeare's genius has thrown a poetical halo over the name of Ariel. In his "Tempest" Ariel is represented as a spirit of air, and as servant of the witch Sycorax, the mother of the ugly Caliban; and being unable to perform her dirty work, she imprisons him in the cleft

of a tree, where the poor fellow remains for 12 long years, until Prospero comes to his assistance.

ARIENZO, a town of Naples, province of Terra-di-Cavaro, on Mount Tifati, and is surrounded with orange and other fruit gardens. It has 7 churches. Pop. 11,000.

ARIES. I. A constellation, the Ram, is the first constellation of the ancient zodiac. It is surrounded by Cetus, Taurus, Persens, Andromeda, and Pisces. The Greek mythology connects Aries with the golden fleece of the Argonauts. II. In ancient military science, the Latin name for a battering ram; so called because the end of the instrument which punched the walls of beleaguered cities was a mass of bronze or iron made somewhat in the form of a ram's head. The method of withdrawing the aries, and butting it again against the wall, also suggested the appellation.

ARIMASPIANS, a fabulous people of antiquity spoken of by Herodotus. They are described, among other things, as one-eyed, and as countrymen of the dragons who kept watch over the gold, from whom, however, they contrived to beg, borrow, or steal large quantities. They dwelt on the golden-sanded river Arimaspa. Of course the most remote and least known region was selected as their place of habitation. Some place them in Scythia, and others in Sarmatia. Modern commentators say that the gold mines of the Ural mountains gave rise to the fable.

ARINOS, a river of Brazil, province of Mato Grosso; rises in the Parecis mountains, flows north-westerly, and empties into the Tapajós, an affluent of the Amazon. Length, 700 miles.

ARION, a famous musician of Lesbos, and a friend of Periander, king of Corinth. When returning home from Sicily, where he had amassed great riches, the sailors determined to throw him overboard and seize his treasures. Discovering the plot, he begged permission to play one melodious tune before it was put in execution, and, having done so, threw himself into the sea. The dolphins, charmed by his music, carried him on their backs to Tænarus, whence he passed over to Corinth, and on the arrival of the ship had the sailors put to death.

ARIOSTI, *Artilio*, an Italian composer, born in Bologna in 1660, and educated for the priesthood, which he forsook for the study of music. He wrote principally operas, which had a considerable reputation throughout Europe in the beginning of the last century. He gave instructions on the harpsichord to Handel, whose musical genius he was among the first to recognize and direct.

ARIOSTO, *Lunovio*, an Italian poet, born at Reggio Sept. 8, 1474, and died June 6, 1533. His father, a man of high birth, was a favorite and confidential agent of the ducal house of Ferrara, and was governor of Reggio at the time of the poet's birth. He was not a provident father, and a large family, liberal disposition, and facility in obtaining requisite

means for daily outlay, induced him to enjoy the present rather than secure independence for the future. Ludovico, therefore, the eldest of 10 children, was early aware of the necessity of labor; and, although he had given signs of promise by a juvenile dramatic composition and a Latin oration, he was forced to attempt the study of law. Five years of useless experiment at length obtained him a reprieve; and, just before reaching manhood, he had the paternal sanction to devote himself to the Muses. His first object was to revive and enlarge his classical knowledge; and, although Latin was then the language of scholars, so refined was his critical appreciation of Horace and Ovid, that he soon acquired fame as a Latinist. In his epistle to Bembo is a eulogy of Gregorio di Spoleto, one of the celebrated men of learning of that era; and this was an offering of gratitude for the teaching of Gregorio the poet owed much of his skill in Latin verse. On the death of his father, the same filial obedience and sense of duty which led him, in boyhood, to study law against his inclination, at this sad crisis of his family fortunes, made him self-devoted, patient, assiduous, and careful; so that at 24 he was the guardian and support of his brothers and sisters. This domestic application occupied the greater part of 20 years, during which he acquired social distinction; which, however, appears to have been at first accorded to his acquisitions, wit, and character, rather than to any preëminence as a poet; at all events, his work in the latter vocation was originally of a casual and ephemeral kind—sonnets and elegies which scarcely foreshadowed his elaborate and original epic. He was at this period employed by that ambitious but exacting patron of men of letters, Cardinal Hippolito d'Este. It is an interesting and almost a unique picture, in literary annals, which Ariosto now offers to the imagination;—the head of a large family, each sister to be well married and each brother to be ushered into some lucrative employment—all meantime dependent upon him—a courtier, obliged to be on the alert to gratify his patron and conciliate "troops of friends,"—now busy over his father's accounts, and now directing some household economy; this evening playing the agreeable in a palace and the next teaching his brother Latin; one month absent on an embassy to Rome and the next immersed in business correspondence; yet all the time musing on his favorite theme, seizing from life and nature gleams of truth and fantasy wherewith to enrich his verse, and ever and anon retiring to his birthplace; and there, in a kinsman's villa, in the lonely chamber of an old tower, constructing his wayward, dreamy, fantastic, yet beautiful and most attractive poem. There were adventurous episodes, however, in this life of the court, the family, and the scholar. He was sent by the duke of Ferrara on a conciliatory mission to Pope Julius II., who had long coveted that prince's domain and now sought it through religious pretexts. He

subsequently distinguished himself at the battle of Ravenna, where the papal and Venetian forces were defeated; a second time he undertook an embassy to Rome, but he was badly received and savagely threatened, so that it became necessary for him to escape in disguise. Cardinal Hippolito desired the poet to attend him on a visit to his bishopric of Segovia in Hungary; and his refusal induced a permanent estrangement, notwithstanding the adulation lavished on him so unworthily in the *Orlando*. Ariosto was now asthmatic, and, therefore, unfit to brave a northern climate; many other objections, some of them not a little humorous, he cites by way of apology for not obeying the haughty cardinal. An expensive lawsuit added to the vexations attending his loss of patronage; but, upon Hippolito's death, he entered the service of his brother Alfonso, with whom he became a favorite companion; the duke allowed him to indulge his architectural fancy in building a house for himself in the centre of a garden; but, even with this luxury at command, he was vexed and hampered by precarious means and inadequate resources; he enjoyed certain ecclesiastical revenues and numerous costly gifts from the princes and churchmen of his time, as tributes of admiration or rewards for diplomatic services, but even with the splendid hopes excited by Pope Leo's partiality, and with all the distinction and privileges he enjoyed, his experience only confirms the frail support proverbially realized for literature through princely patronage. Whenever opportunities presented themselves, Alfonso sent him on errands which often yielded him personal honor and emoluments. It was on one of these missions, in a dreary part of the Apennines, that his famous adventure with the robbers, so long traditional in Italy, occurred; they paid little respect to the envoy, but spared and honored the poet. According to Baretto, however, he was surprised by the banditti near his own abode, when, in a fit of abstraction, he walked into the forest in nightgown and slippers. The anecdote, at all events, aptly illustrates the firm hold his verses had taken upon the common heart. As life advanced, he declined offers of employment, and gradually withdrew from official life to the retirement congenial to his tastes. His last years were given to revising and enlarging the *Orlando* and writing his satires; which, in fact, give the chief biographical data of his career, being filled with political, domestic, and personal allusions; they are modelled upon Horace and written in the form of epistles to intimate friends; unfortunately their indecent and licentious passages seriously mar the legitimate rank they might otherwise hold as literary productions. At the close of 1532, the magnificent theatre which the duke of Ferrara caused to be built as an appropriate scene for his favorite poet's comedies, was destroyed by fire. The event is said to have greatly excited Ariosto; he was seized with illness, which his physicians

ascribed to indigestion; and, a few months after, expired. During this fatal indisposition he put the last touches to his immortal poem. Thus left, it consisted of 46 cantos; the other 5 never deemed of equal merit, did not appear until more than 20 years subsequently. To account for the popularity of the *Orlando Furioso*, it is indispensable to remember the age of its production and the circumstances under which it was written. It is an acknowledged distinction which Ariosto enjoys in common with only the father of Greek song, that the common people and the high-bred, the ignorant and the learned, equally delighted in his poem. His fame differs essentially from that of Dante or Tasso; the one demanding a vigorous mind and a refined perception for his appreciation, and the other a chivalric sympathy; whereas Ariosto captivated, at once, the frivolous and the earnest; and those without the least valorous aspiration keenly enjoyed his fanciful and vivacious strain. This universal popularity is owing to his subject and his style; the public of his day were prepared to receive the former, because Bojardo's *Orlando Innamorato* had opened the vein which is elaborately worked out by Ariosto. The associations, too, of knight-errantry were fresh and prevalent; his was an age of courtly splendor, of feats of arms, of trials of intellectual skill and of gallantry, when the accomplished man of the day could equally well handle a sword, improvise a love song, and exercise political sagacity and social tact. Then to be brave, prompt, romantic, splendid in costume, graceful in manner, devoted to lady-love and loyal to duke or pontiff, were the requirements of ambition. Hence the machinery of Ariosto's poem—the combats and the paladins, the lover's devotion and the mad adventures, were congenial to the general fancy; while the easy, nonchalant, animated, and graceful manner in which the narrative is woven, had a singular charm. It was perfectly intelligible, and seemed, however carefully wrought, like a pastime to the writer, such is the apparent facility of its versification. This facile grace "beyond the reach of art" was a marked trait of the poet's genius; another was his fertility and versatility of invention; and still another, the quick transitions of ideas and beauty of comparisons. These elements of popularity we, of a later day, easily recognize; but, at the same time, cannot but find some of his descriptions tedious, and many of his cantos unsustained throughout by the vivacity and genial flow of their first movement. His violations of decency and the sacrifice of all elevation, either of style or sentiment, to clearness and distinct meaning, are perhaps inevitable defects in such a work. The *Orlando Furioso* was first printed at Ferrara in 1516; the next 100 years was prolific in editions; and to-day a group on the mole at Naples listens with avidity to a reader of Ariosto; while the most popular of modern English poets exerted all his powers to reproduce in "Beppo" and "Don

Juan" the careless, gay, and magnetic melody of this popular bard. The principal ancient editions of the *Orlando Furioso* are those of Ferrara, 1516, 1524, and 1582, published under the superintendence of the author, and the Aldine edition of 1545. The best modern edition is that of Morali, 4to, Milan, 1818, which follows the original text of 1582. Of the English translations by Harrington, Hoole, and Rose, the latter is esteemed the best.

ARIOVISTUS, a chief of the Marcomanni, a German tribe, crossed the Rhine with 15,000 warriors at the call of the Sequani, who were oppressed by the Ædui, defeated the Ædui 72 B. C., but took one-third of the land of his allies for his Germans, and threatened to take more. He invited his countrymen over the Rhine, and made a settlement there of 120,000 strong. The Ædui and Sequani called in Julius Cæsar and the Romans to their aid. Cæsar ordered Ariovistus to make no more conquests, to call no more Germans over, and to give up the hostages he held of the Gauls. Ariovistus returned an insolent reply. Cæsar marched against him and compelled him to give battle near Vesontii, now Besançon, 58 B. C. He was defeated, and few of his warriors escaped. His German and his Helvetic wife, and his 2 daughters, fell into the hands of the Romans. He himself escaped across the Rhine in a small boat, and ended his days in obscurity.

ARISMENDI, JUAN BAUTISTA, a distinguished Venezuelan general. When the Spanish general Morillo had besieged and subjugated Carthagena, and had at the same time rendered himself hateful to the Venezuelans by his confiscation of their property and other cruelties, Arismendi, in conjunction with Bolivar and Paez, aroused the inhabitants to a fresh resistance, and defeated Morillo in several engagements. In 1819, Morillo being driven from New Granada and most of Venezuela, Arismendi was chosen vice-president of that republic. In the insurrection of Paez, in 1826, during the absence of Bolivar, Arismendi espoused the cause of the constitutional party, and was of material service to Bolivar in restoring the peace of the republic.

ARISPE, a Mexican town, situated in a fertile valley of the river Sonora, at the foot of the Sierra Madre. It was formerly the capital of Sonora, but on becoming involved in the civil wars, which distracted that state in 1828, the seat of government was, in 1832, transferred to Urea. Arispe is celebrated for the rocks in its vicinity, which form 8 columnar masses of about 50 feet in height. The church is the only noteworthy building. Owing to the civil wars and the encroachments of hostile Indians, the population, which once exceeded 5,000, and according to some authorities even 7,000, has dwindled down to 1,500. Mr. Bartlett, while at Arispe in the survey of the boundary between the United States and Mexico, attended mass, and reports that "he found the church filled almost exclusively with women. The

music was performed by a band, in which clarionets predominated, and we recognized among the tunes several of our popular Ethiopian airs, such as 'Dearest May.' The singing was performed by 2 girls, who seemed to have perfected themselves in the art under the tuition of the Chinese. The altar is covered with massive plates of embossed silver, and there is a profusion of this metal display in the shape of massive flower vases, chandeliers, and censers."

ARISTA, MARIANO, a Mexican general, born in the state of San Luis Potosi, Mexico, July 16, 1802, died in Spain Aug. 9, 1855. His father was a lieutenant-colonel in the Spanish army; his mother was also Spanish. His education may be said to have been entirely military, for at the age of 11, in 1813, he was placed in the Spanish army as a cadet, and served till June, 1821, when he joined the cause of independence, and received the commission of 1st lieutenant. He distinguished himself throughout the rest of the year (1821) in various severely contested actions, and obtained for his services the brevet of captain. In December, 1822, Santa Anna, then a general of brigade, revolted against the emperor, Iturbide, at Vera Cruz. The latter sent forces to suppress this revolt, which were to operate under the orders of Gen. Chávarri. Upon the arrival of these forces, however, Chávarri combined with Santa Anna, and a plan was formed among all the principal chiefs, Feb. 2, 1823, called *El acta de Casa Mata*, which resulted in the overthrow of the Mexican empire in the month of March following, and in the establishment of the federal system. Arista's name is first mentioned in the history of Mexico in the year 1825, during the administration of Gen. Victoria. He was a captain in the army, stood well with the government, and was a prominent member of the political party called the *Yorkinos*. This was a body of freemasons, so called, established in the city of Mexico in that year for the purpose of counterbalancing the intrigues of the Scotch lodge or *Esoceses*. In the fall of 1828, Gomez Pedraza was elected president, and Gen. Guerrero, vice-president. Santa Anna, as soon as the result of this election was known, early in September (1828), declared against Pedraza and sustained the election of Guerrero. Arista adhered to the same cause, joined Santa Anna, and remained at his side while they were besieged at Oaxaca, where the latter, with his forces, had been obliged to retire, which was until December of the above-mentioned year, when the successful issue of the revolt, called that of the *Acordada*, in the city of Mexico, finally placed Guerrero in power. Arista was promoted during the first month of Guerrero's administration (April, 1829), to the grade of lieutenant-colonel. While Santa Anna was sent against the Spaniards, Bustamante, the vice-president, received the command of a reserve corps, and was ordered to Jalapa. Arista had a command in that corps. Bustamante revolted, which caused the downfall of Guerrero in December, 1829, and he placed

himself in the presidential chair on the 30th of that same month. Bustamante had, till about that time, been a distinguished member of the *Yorkinos*, a friend of Guerrero and of the other principal men who composed that party, but he now abandoned all and established a central system of government. Arista served his administration faithfully, and was engaged in almost every action that took place, in consequence of the resistance to it, the principal one being the famous battle of the Gallinero, fought in October, 1832. During this administration, he was promoted to the full grade of colonel and to the brevet of general of brigade. Santa Anna rose against Bustamante, and, by virtue of a new election of both congress and president, was chosen for the latter post. He took his seat April 1, 1833. Upon the accession of Santa Anna, Arista was promoted to the full grade of general of brigade, and in the month of June (1833), he was second in command of the army. The acts of the new congress caused a revolt in Michoacan, in the month of May, in favor of religion and church privileges. This revolt was seconded at Ohalco by Gabriel Duran, with the troops under his orders. Santa Anna took command of the army in person, and, accompanied by Arista as second, marched against this insurgent, when the latter retired in the direction of Cuernavaca, to the south of Mexico. During this march, however, Arista, with the whole division, joined the movement of Duran, and proclaimed Santa Anna as dictator June 6. Duran and Santa Anna held a conference together, but the latter positively refused the proffered dictatorship, and, after having been detained a prisoner for 4 days, made his escape and returned to the city of Mexico. The plans of Duran and Arista, whatever they may have been, were thus disconcerted. Nevertheless, they advanced to the gates of the capital. On July 7, they made an assault, but were repulsed with loss, and, with diminished forces, retired toward the interior of the country, fortifying themselves at Guajuato. Santa Anna followed, attacked them at that city, where they capitulated in October (1833). For this act Arista was deprived of his rank and expelled from the Mexican territory. He embarked for the United States in November of the same year. He was absent about a year and a half, when, upon an amnesty, he returned, June, 1835. By his letters written at that period, we see that he had resolved to abandon military and political life. But in August, 1836, being officially informed that, by virtue of a general decree of amnesty of May 2, 1835, he had been restored to his rank as brigadier-general, he resumed his position in the army, and in that month was appointed judge of the supreme tribunal of war, which office he held till April, 1837, when he received the thanks of government for his services. In June, 1837, he was named a member of the junta of the military code, and a little later, a member of the consulting council of war. In October of the same year, he was appointed inspector of the active

militia, during which time he reorganized it, and caused it to be instructed, for which service he also received the thanks of the government. In September, 1838, he received the command of a brigade destined to operate against the invasion of the French at Vera Cruz. On his way thither he received orders from Gen. Santa Anna, who commanded in chief, to hasten to that place in advance. He arrived there on the evening of Dec. 4, and on the morning of the 5th, was taken prisoner by the French. About 2 months later he was released on parole. In 1839, the command of a brigade destined against the revolt of Urrea at Tampico, was confided to him, and with only 400 men he caused that general, with a force of 1,200, to surrender. He was next appointed commander-general of Tamaulipas, and upon the close of that year, 1839, he was named general-in-chief of the northern division of the army. Upon his arrival at Monterey, he reorganized the forces, and, after various encounters with the insurgents of the eastern departments, defeated them at Santa Rita, and succeeded in pacifying all that frontier, for which a special cross of honor was awarded him. In the month of September, 1841, he was promoted to the rank of general-of-division by President Bustamante, which was afterward confirmed by Santa Anna notwithstanding other similar acts of Bustamante's government had been altogether set aside. In November, 1841, he resigned this command, but was soon reappointed. He was next deprived of it by a revolution, but on the fall of Santa Anna, in December, 1844, he was again restored, and in a few days caused the government of Herrera, who succeeded Santa Anna, to be recognized throughout the eastern departments. Upon the breaking out of the war between Mexico and the United States, Arista made great efforts to put the eastern frontier in a respectable state of defence, and to increase his brigade to 6,000 men, but he was not supported by the government; and upon the revolt of Gen. Paredes (who made himself president), with the whole division of reserve at San Luis Potosi, Arista was displaced. Paredes, however, upon learning of the approach of the American army toward the Mexican frontier, reinstated him in that command April 4, 1846. He commanded at the battles of Palo Alto, and Resaca de Guerrero. The trial which he had solicited, after the loss of these two battles, was commenced but was delayed during the rest of the war of 1846 and '47, in which he did not serve. It was taken up, however, in May, 1850, when the court decided "that he had complied, in the defence of his country in the battles of May, 1846, with what was demanded by his conscience, his honor, and his obligations." In June, 1848, he was appointed by President Herrera, minister of war. Upon his accession to this important post, his attention was at once directed toward putting all belonging to that department, which, from the late war and other

causes had become greatly deranged, into a proper state. He caused all the artillery to be repaired and renewed; the useless pieces from the different parts of the republic were brought to the capital and recast. A train of 28 pieces had been made in 1850 for the capital, where none existed when he came into office. A new foundry for cannon was established, with all the necessary apparatus. The arsenals were put in order, and factories for the repairing of arms established. Under the auspices of the department, the geographical and statistical society, among other important works, prepared a large map of the republic. The geographical section of the department also prepared a general atlas of the republic, and plans of the ports. The invalids of the army were provided for by placing them in service in the garrison of Mexico. He had long cherished the wish to establish military and agricultural colonies on the Mexican frontiers, and now executed this plan on the borders of the states of Tamaulipas, Coahuila, Chihuahua, Sonora, and Lower California, and in various parts of the interior known as the Sierra Gorda. To each colony an ample grant of land was made, which was parcelled out among the colonists, who were furnished, beside, with agricultural implements by the government. The colonies were free to be settled by others than soldiers, and these settlers enjoyed all the civil rights of colonists in general, being exempt from taxes of every kind, even from church dues. Enlistment for military service in them was voluntary. As long as Arista remained in power, they thrived, but are now in an advanced stage of decay. One of them bore his name.—Gen. Arista displayed activity and good judgment while minister of war, and these qualities were frequently exercised both in the councils of state and in the management of his own department, the result of which was the successful suppression of 17 revolts that occurred at different periods during those 2 years. In the fall of 1850, he was elected president of the Mexican republic, and on Jan. 15, 1851, he entered upon the duties of his office, supported by the majority and the enlightened portion of the inhabitants, but, nevertheless, amidst the murmurs of personal and political enemies. The principal difficulty to be settled was the absolute want of money. The amount of the indemnity becoming due from the United States, had been already disposed of, by the law of 1849, for the regulation of the public debt. The finances were in a state of confusion, and the estimate showed a deficit of over \$4,000,000. Every source of revenue had been forced to the highest pitch, and the outlay greatly reduced. An increase of revenue was, therefore, necessary, and the first care of the administration was to recommend measures to obtain a fixed and steady income. One of the greatest desires of Arista was to comply with the law of 1849, with respect to the public debt, yet he felt the impossibility of doing so under the existing circumstances. The ordinary

session of the congress of 1851 closed without effecting any thing. The two chambers continually disagreed, the senate manifesting, if not a decided hostility, at least an open distrust and opposition to the government, while the chamber of deputies sustained it. A special session was held in April, 1851, when a bill was presented by the department of finance, granting certain powers to the government for the purpose of obtaining a revenue until July, 1852. This bill was agreed to by the chamber of deputies, but rejected by the senate. This session was had solely for the purpose of providing means for the government, but, although, it lasted 80 days, nothing was done. An extra session was called on June 1, and as the necessities of the government were pressing, \$250,000 a month was granted it from the American indemnity, which had been reserved to the public creditors. The expenses of the government were stated to be \$10,997,884, and the revenue, \$8,000,000, consequently there was a deficit of \$2,997,884. Certain other measures were now proposed by the government, by means of which, it was stated, this deficit would be covered, and an annual surplus obtained of \$142,000. The states protested against the same, and the matter was dropped. Up to the middle of July, 1851, as the congress had done nothing in the way of producing a revenue, and had refused to accede to the measures which had been proposed by the government for this object, the latter called upon the governors of the states to suggest some plan to congress for this purpose. The governors met in the capital on Aug. 20, and, as if to add to the perplexing situation of the government reported that, instead of a large deficit, they had found that a surplus existed, when, in truth, there was not the necessary funds for the most ordinary daily expenses of the administration. The ministers of finance and of war resigned, the former declaring that his statement of the financial condition was perfectly correct and true. Revolts and other political disturbances now became frequent. Foreign ministers protested against the treatment of their fellow-citizens. The circumstances of the government were, however, taken into consideration, and a new arrangement was made with the creditors in December, 1851. During the latter part of that year, a serious revolt took place in Tamaulipas. The governor of that state, in order to oppose this movement, the object of which was smuggling, took the responsibility to establish a new and reduced tariff. It was not recognized by the government, and caused trouble by reason of continued protests of merchants and reclamations of foreign ministers. The government was pressed on all sides for the want of means, having to suspend, almost entirely, the payment of the interest of the public debt, and even to withhold a part of the salaries of its employees. During the year 1851, various insurrections broke out, but they rapidly increased in 1852. About the middle of this year, Arista had be-

come the object of the most violent attacks from the press. In July, 1852, a faction rose at Guadalajara, and took possession of that city, having a population of nearly 80,000 inhabitants. The legal authorities fled. The ecclesiastical bodies, with the bishop of the state, with various corporations of the same, soon made their submission to what was called the provisional government, proclaimed there. In August, a revolt took place also at Mazatlan, while another was going on at Jalapa. In September, Santa Anna was publicly proclaimed at Guadalajara, and his partisans rushed thither and swelled the numbers of the revolutionists. Congress was called for an extra session, and the governors of the states were also called upon to cooperate with the government in suppressing the revolution. The majority of them promised to do so, but they soon relapsed into apathy, and nothing was done on their part, and even the congress closed without giving the requisite aid. The ordinary session of the congress opened Jan. 1, 1853. The president, upon the occasion, earnestly endeavored to call its whole attention to the prevailing situation, but that body was irresolute or careless; it hesitated while the revolution rapidly increased, and, finally, seeing that the congress did not act, the constitution giving him no authority to adopt the measures suggested to his own mind, and that his endeavors under it were of no avail, on Jan. 5, 1853, Arista delivered the government, as prescribed by the constitution in case of resignation of the president, into the hands of the presiding judge of the supreme court. Arista now retired to his farm in the Llanos de Apam, determined to spend the rest of his days far removed from public life. But his presence was annoying to his enemies, and, though sick in body and at heart, he was banished from the country. He made a voyage to Europe. While on a visit to Spain his illness increased. He set out for France, and died on his way thither at the age of 53, on the same day that Santa Anna, who had usurped his seat, fled from the city of Mexico. His heart was carried to Mexico, according to his own request. The government of Alvarez, in 1857, ordered that the rest of his remains should be brought home at the public expense, and in memory of his services declared him by a special decree, ratified by the constituent congress, to have "merited well of his country," the highest honor the Mexican nation can confer either upon the living or the dead. His bravery was acknowledged. He was a man of strong passions, sanguine in his temperament, as sensitive as a woman, and with a heart as kind. He wrote much, expressed his thoughts and ideas with clearness and vigor, and in a style remarkably concise. He loved agricultural pursuits, and owned an estate, in former years, near Monterey, in the cultivation of which he took much pride. He disposed of that in later life, and purchased one in the Llanos de Apam, to which he dedicated much of his attention. He sought after all kinds of use-

ful improvements in agriculture, and when expelled from Mexico, in 1838, he paid particular attention to the improvements made in agricultural implements in the United States, and on returning to his country, he introduced many of them on his own estate. He was married, but had no children. He accumulated no fortune, and though he owned a valuable farm, he was aided in its purchase by loans from friends. His estate is now under liquidation, and it is found that after all debts are paid, nothing of moment will remain.

ARISTÆUS, the son of Apollo, married the daughter of Cadmus, and became the father of Actæon. He fell in love with Eurydice, the wife of Orpheus, whom he pursued into the fields, where she was bitten by a serpent. For this he incurred the anger of the gods. He taught men the culture of the olive and the management of bees, for which service he was placed among the stars.

ARISTARCHUS. I. The greatest philologist and critic of antiquity, born in Samothrace, was educated at Alexandria by Aristophanes of Byzantium. He flourished in the reign of Ptolemy Philopator, 150 B. C., and his immediate successors. He was the founder of a grammatical and critical school, which long flourished at Alexandria, Rome, and elsewhere. The number of pupils educated by him was such that Alexandria and Rome alone contained at one time no less than 40 celebrated philologists who had been brought up in his academy. He was also the preceptor of Ptolemy Epiphanes and Ptolemy Physcon. In his old age he left Egypt and went to Cyprus in consequence of the injustice he had experienced at the hands of Physcon. There, being afflicted with the dropsy and weary with suffering, he put an end to his life by voluntary starvation in the 72d year of his age. He is frequently called by ancient authors the "prince of grammarians." Criticism, in the widest sense of that term, as understood in antiquity, was the great business of his life. To purge the text of each of the great poets of Greece from the interpolations and corruptions which had crept into it, to illustrate its obscurities, to draw attention to its beauties and perfections—this was the task to which his great abilities and acquirements were devoted. But it was on the text of Homer that he especially delighted to meditate and labor, and such was the extraordinary acumen displayed by him in surmising its true readings, and detecting its spurious ones, that Panætius, the Stoic, pronounced him a "diviner," and the greatest modern critics aspire at nothing more than bringing back the text of the poet to that state of purity in which Aristarchus left it. Aristarchus is said to have written 800 commentaries, but nothing of all his writings remain save those scattered unconnected fragments which the scholiasts have preserved. II. Of Samos, flourished about 400 B. C., and was one of the first who held that the earth revolves around the sun, for which opinion

some thought him guilty of impiety. The only work of his extant, is a treatise on the distance and magnitude of the sun and moon, of which a French translation was published in 1810.

ARISTIDES. I. An Athenian, the son of Lysimachus, and a contemporary of Themistocles. In early childhood he exhibited calmness, resolution, and a contempt of every thing dishonorable. His admiration of the institutes of Lycurgus gave his opinions a bias in favor of oligarchy. Themistocles, on the contrary, belonged to the democratic party. Hence, between these two distinguished men existed a life-long opposition on all measures of public policy. Aristides is said to have remarked on one occasion that the Athenian commonwealth would never prosper until both were thrown into prison.—At Marathon Aristides was second in command, and set the example of resigning his day of command in favor of Miltiades. Being left in charge of the Persian camp, he maintained his integrity by bringing all the spoils to the public treasury. Soon after, by the intrigues of his rival Themistocles, he was ostracized on the pretext that he was acquiring an influence dangerous in a democracy. He employed the years of his exile in endeavoring to stir up the Grecian cities to resist the Persians, at that time preparing for a second invasion. He sought an interview with Themistocles before the battle of Salamis, concerted with him the plan of that engagement, and gave him his hearty support. The success of the Greeks at Plataea was chiefly owing to his courage and watchfulness. A disagreement of the allies concerning the honor of that day having been referred to him for decision, he surrendered the claim of his countrymen in favor of the Plataeans, and persuaded the Lacedæmonians to follow his example. The Persian war continuing, he, with Cimon, the son of Miltiades, was sent at the head of the Athenian forces to join the confederate army. The mildness and urbanity of his deportment, contrasted with the arrogance of the Spartan commander Pausanias, so charmed the rest of the allies that a confederation of the Ionian states was formed under the hegemony of Athens. The Greeks had so high an opinion of his integrity, that he was appointed to assess the expenses of the war on the several states—a commission which he executed to the satisfaction of all. When Themistocles fell under suspicion he did not join in the prosecution; and after the banishment of his rival he always spoke of him with admiration and respect. Aristides died 468 B. C., not leaving the means of defraying his funeral expenses. He was buried at the public cost; his daughters received dowries out of the public treasury, and a landed estate was bestowed on his son.—So conspicuous was the purity and rectitude of his character, that in his lifetime he was called "the Just." When a verse of Æschylus was first uttered in the theatre, describing in vigorous terms the character of an honest man, every eye is said to have turned involuntarily

to Aristides. When Themistocles stated in the public assembly that he had devised a measure of great advantage to the state, but of such a nature that it could not be made public, he was directed to disclose it to Aristides. It was a proposition to secure the naval supremacy of Athens by burning the ships of her allies. Aristides reported to the people that nothing could be more advantageous, and, at the same time, more unjust; and the proposition was not entertained. His exploits were less brilliant than those of Themistocles. He did not destroy great fleets, nor display that military genius on land, which first disclosed an art of war. But his virtues have secured for him as wide and a purer fame. II. P. *ÆRUS*, a Greek rhetorician, born at Hadrianopolis, in Bithynia, A. D. 117 or 129, died A. D. 189. He was the son of Eudæmon, a priest of Zeus, and applied himself with unrivalled zeal, under various teachers, to the study of eloquence and poetry. He left admirers of his talents in every place where he studied, and several towns raised statues in his honor, one of which, representing him in a sitting attitude, was discovered in the 16th century, and is now contained in the museum of the Vatican. After traveling through the countries which border the Mediterranean, he took up his abode at Smyrna, and his countrymen, in their enthusiasm, likened him to Demosthenes. He was an associate and admirer of Marcus Aurelius, and when in 178 Smyrna was almost wholly destroyed by an earthquake, he addressed to that emperor a letter describing the catastrophe, and picturing the misfortunes of the inhabitants. The emperor assisted in rebuilding the city, and the Smyrneans testified their gratitude to Aristides by naming him the founder of the town, and raising to him a bronze statue in the agora. He held, until his death, the title of priest of *Æsculapius*. Fifty-five of his orations and declamations have been preserved, consisting of eulogies on various divinities, panegyrics on towns, and treatises on rhetorical topics. They are marked by the excessive brilliancy and stateliness of style which distinguished the rhetoricians of his age, but Aristides far surpassed most of his contemporaries in vigor of thought, and his study of the ancients saved him from the poor witticisms and shallow plays upon words with which many of his associates sought to produce a momentary effect. Six of his pieces, entitled the "Sacred Discourses," are interesting, in connection with the history of animal magnetism. They describe a singular malady, not unlike somnambulism, and the cures of it wrought by the counsels of the god *Æsculapius*. The disciples of modern mesmerism find in the descriptions by Aristides something similar to the later mesmeric phenomena. His works also contain valuable illustrations of history and antiquities, and many fragments from other works now lost. The latest and best complete edition of them is that of Dindorf, in 3 volumes, Leipzig,

1829. III. OF *THEBES*, a Greek painter, flourished from about 360 to 330 B. C. He is said by Pliny to have been a little older than his contemporary, Apelles, and to have been the first who knew how to express upon the countenance the passions and movements of the soul. The most celebrated of his paintings represented a mother mortally wounded in the bosom, and fearing lest her child, if she gave it suck, should draw blood instead of milk. This picture was so much admired by Alexander that he removed it to his capital. He painted a battle between the Greeks and Persians, which contained more than 100 figures, and at the time of the Roman conquest, the consul Mummius, discovering the high price set upon it, and wholly ignorant of the value of a masterpiece, seized it as a talisman, and sent it to Rome. It was placed in the temple of Ceres, and was the first foreign painting exposed to the view of the yet rude Romans. Aristides was also famous for his pictures of Grecian hetærae, and is said to have invented encaustic painting in wax, afterward carried to perfection by Praxiteles.

ARISTIPPUS, a native of Cyrene, whence his philosophy was called Cyrenaic, and the disciple of Socrates, flourished 380 B. C. His mode of life differed greatly from that of his master, for he was luxurious, sensual, and avaricious. The numerous anecdotes of him, however, do not represent him so much the slave of his passions as one who prided himself on extracting pleasure from prosperity and adversity alike. When reproached for his love of bodily indulgence, he said that the shame consisted, not in the encouragement of it, but in not being able to give it up. His conversation was rendered agreeable by continued flashes of wit. Dionysius having asked him how it happened that the philosophers were always besieging the doors of the great, whereas the great never went to the philosophers, he answered, "Because the physicians usually go to the sick." Being rallied on his intercourse with the wanton Lais, he said, "It is true that I possess her, but she possesses not me." One bragging that he had read a great deal, Aristippus told him that it was no sign of health to eat more than one can digest. Dionysius having assigned him the lowest place at table he said, "You wish to dignify the seat." Under the most bitter insults and reproaches he maintained perfect imperturbability of temper. He is said to have incurred the dislike of Plato and Xenophon, who accordingly, in their works, speak of him slightly. His doctrine was reduced to a system by his grandson, Aristippus the younger. The Cyrenaic philosophy pronounces pleasure the chief good, and pain the chief evil,—the former a moderate, the latter a violent motion of the soul. Pleasures differ only in their degree of purity. Actions are to be judged good or bad by their results; and in forming a judgment the only authorities are law and custom. Whatever conduces to pleasure is accounted

virtue; but virtue is regarded as a quality of mind rather than of the body, since bodily pleasure is valued for the sake of the mental state produced by it. This system in some respects anticipated the philosophy of Locke and Hume; for its advocates held that the senses are the only avenues of knowledge. At the same time they asserted, that a subject becomes cognizant of objects only through the media of impressions, that the only existences are states of mind, and that man is the measure of all things,—doctrines not unlike some of the doctrines of modern idealism.

ARISTOBULUS. I. An Alexandrian Jew, who lived in the 2d century, possessed some knowledge of the Aristotelian philosophy, but made the Mosaic law his chief study. In his commentaries upon the Pentateuch, composed in the purest Greek, he undertook to prove that the Grecian poets, historians, and philosophers, were acquainted with the sacred writings, and in the habit of borrowing largely from them. In support of this theory, he forged numerous passages, ostensibly from profane authors, with such art as to deceive Greek writers and some of the fathers of the church. II. An officer of Alexander's army, who at the age of 84 years, wrote a history of all his campaigns, which Arrian took for his guide in editing the *Anabasis*. Plutarch, Lucian, and Athenæus, praise his accuracy.

ARISTOCRACY (Gr. *aristokratia*, the rule of the best). In the higher philosophic conception, the government of society by the best amounts almost to an ideal toward which humanity has aspired from its cradle. But, as a positive fact, aristocracy is the rule of the comparatively few over the many; and even if originally animated by the noblest purposes, it appears in history, almost from the beginning, as a mere hereditary privilege. It is established by the founders of communities, cities, and states. Having gained power over the subdued and conquered mass of men, or over those who have voluntarily gathered around them, they consider themselves the best, and are likewise so considered by those under their control. Their superior mental or physical ability, real or supposed, is believed to be transmitted by blood, and thus the power of the father is maintained in his descendants by custom, use, or force. Aristocracy reaches back almost to the first formation of society. Legend, tradition, and positive history, exhibit it in the most ancient nations and states, as, for instance, among the Aryans and Assyrians, under both kings and chiefs, it being coexistent with royalty, and not intrinsically inimical thereto. China, however, is an exception to the rule, having had no aristocracy until the Mantchoo conquest. The Persians, although all free, had a class of nobles, and among these there were aristocratic families surrounding the king, and partly sharing his power. The Greek aristocracy were wont to attribute their origin to the gods, demi-gods, and heroes, whom mythical and religious tradi-

tion surrounded with public reverence, and to their companions who had shared their labors, and assisted them in raising cities and states. As a matter of fact, these persons were very probably the Dardans and Hellens, who conquered and organized the aboriginal inhabitants of Greece.—The Roman patricians were descended from the roving predatory associates of Romulus, that is, historically speaking, from the first founders of the city, who alone formed the Roman body politic, and enjoyed the rights of citizenship. At first they shared power with the kings, but on the expulsion of the latter, monopolized it for themselves. The aristocracies of all nations, ancient as well as modern, have always boasted of the purity of their blood, and to maintain it have avoided all but aristocratic intermarriages. Thus it was in Greece; and the Roman patricians had a special rite to consecrate the union of parties of pure lineage. Among the ancients, aristocracy was likewise based on the proprietorship of land to which, along with general civil rights, special privileges were attached. The policy of sovereign aristocracies has generally been ambitious and conquering; their domestic rule, when not contested by other classes of the population, often equitable, and not worse than that of royalty. But they have ever been most jealous in preserving sovereignty for themselves. They have defended it to the utmost, not hesitating at murder, cruelty, and civil war, when necessary for that purpose. The struggles of aristocracy for power, form the most prominent feature in the history of the Greek republics, and above all of Athens, and the Thebans. The same is true of the republic of Rome. Aristocratic families existed among the Germans previous to their irruption into the Roman world, and among the Scandinavians. The Goths, while yet heathens, and confined to the country of the Danube, had a civil and sacerdotal aristocracy, with considerable political power, under their kings. History calls this aristocracy *pilefori*, or those who kept their heads covered at sacrifices, and in the presence of the monarch. This aristocracy was continued in Spain after its conquest by the Visigoths, and from it the Spanish grandees derive the privilege of remaining covered in the presence of royalty. When the various German tribes conquered the Roman world, and established their dominion over it, giving a feudal organization to society, aristocracy obtained a firm basis in the soil. The feudal aristocracy, with extensive political power, became superior to the rest of the conquerors, and even to the mass of the nobility, who were originally its equals. This aristocracy became distinct by its powers and privileges, which were expressed in its titles, as dukes, marquises, counts, and barons. It was early established among all the German tribes, as the Angles, Franks, Lombards, and Saxons, out of and within Germany, and soon raised itself above the body of

the nobility, in the whole of feudal Europe. To some extent it preserved its rights, even after the overthrow of feudalism, and the establishment of absolute royal power. It was in England, however, that the feudal aristocracy reached the highest and most complete development as a strongly cemented body, with predominant political power and influence. In that kingdom, in fact, it became the only form of nobility, whereas, all over the continent, the nobility preserved its existence along with the feudal and political aristocracy. Out of the political organization of the English aristocracy was finally evolved the constitutional system of government. Among the sovereign aristocracies of the Christian era, the most eminent for the wisdom of their rule were those of the republics of Venice and Berne in Switzerland, of which the latter was highly admired by Montesquieu. The great French revolution gave the death-blow to aristocracy as a conception, power, or fact. Absolute royal governments, although propped up by aristocracies, have likewise incessantly endeavored to reduce them to insignificance. At the present day, hereditary aristocracy is on the wane all over the world. Even in England, it has lost force as an idea, while almost everywhere else it is deprived of its ancient preponderance. The most absolute contrast to hereditary aristocracy is democracy. The principal political difference between the two now consists in the one being founded on rights of property, the other on personal rights. Modern times have produced a kind of sham aristocracy, which derives its standing not from birth, power, higher mental qualifications, or real political influence, but from wealth, and the date of its acquisition. This mock aristocracy is a weed which springs up especially in large commercial communities, and in new republics.

ARISTOGITON, an Athenian, commonly reckoned among the martyrs of liberty. He had conceived a shameful passion for Harmodius, a beautiful youth, in which Hipparchus, one of the Pisistratides, was his rival. Stung by jealousy, in conjunction with Harmodius and others, he formed a conspiracy to destroy the tyrant, during the Panathenaic festival, at which the conspirators were present, with their swords concealed in garlands of myrtle. The plot succeeded; but Harmodius was slain by the guards, and Aristogiton secured 514 B. C. When subjected to torture by Hippias, the brother of Hipparchus, he named as his accomplices the best friends of the tyrant, who were immediately put to death. Three years after, on the expulsion of Hippias, the Athenians, from motives of policy, paid distinguished honors to Harmodius and Aristogiton, erecting statues and singing hymns to their memory, and decreeing that no slave should bear their names. To the mistresses of Harmodius who refused to disclose the names of the conspirators, was erected a tongueless statue, to commemorate the victory gained by a woman over her love of talking.

ARISTOMENES, a Messenian, under whose lead his countrymen unsuccessfully strove to shake off the Spartan yoke 682 B. C. The 1st of 8 battles, which were fought in 8 successive years, was indecisive, the 2d a signal victory by the Messenians, the 3d an equally signal defeat, through the treachery of the king of Arcadia. In the course of the war Aristomenes surprised fortified towns in the heart of Lacedæmon, and one night hung his shield in the temple of Athene, in Sparta itself. Three times he offered to Zeus the *Hebatothronia*—the sacrifice of one who had slain with his own hands 100 enemies in battle. Two of the 8 times that he was taken prisoner, he escaped before reaching Sparta; the 3d time he was thrown with 50 of his companions into the Keadas—a chasm in Sparta, used for the punishment of malefactors. The others were killed by the fall; Aristomenes waited until the 3d day, when, espying a fox among the dead bodies, he seized him by the tail, and followed him to his place of exit, which he enlarged sufficiently to creep out himself. To the surprise of all, he appeared at Ira, a fortified mountain, where the whole Messenian force was concentrated. After holding out for 11 years, Ira was betrayed, but its defenders forced their way out and took refuge in various parts of Greece. Aristomenes went to Rhodes, where he died.

ARISTOPHANES, the great comic writer of classic antiquity. It is singular that a man of such celebrity, living in a period of Greek history than which none is better known nor more distinctly historical, a contemporary of all the great men of Athens, with whose deeds, whose fame, whose writings, and almost whose persons we are most familiar, as Sophocles, Euripides, Alcibiades, Cleon, Thucydides, and Socrates, should have transmitted to us so few memorials—and those so doubtful—of his distinguished career. It is not even certainly known of what country he was a native, where he was born, or where he died. That he was an Athenian citizen is clear, but whether native or naturalized remains in doubt, although it seems most probable that he was the son of one Philippus, an inhabitant of Ægina, and that, therefore, he was, only by adoption, a citizen of Athens. The date of his birth has been fixed, by approximation, at 460 B. C., and that of his death at 880 B. C., which would assume him to have lived to the age of 80 years. At a very early date of his dramatic career Aristophanes seems to have turned his attention to politics, and to have directed all his efforts of satire and pleasantry to the local and political occurrences of the day; for his second recorded drama, the "Babylonians," was aimed against the demagogue Cleon, as was also his *Equites*, in a far greater and more virulent degree; and that, too, at a time when his extraordinary and unwarranted success at Sphacteria had gained him such popularity with the mob that to attack him at all was a matter not to be thought of without danger. Danger, however, did not deter

the comic poet from doing as he had promised to do, when, in the "Acharnians," he pledged himself at some time or other to "cut him into sole-leather;" for when no actor could be found to undertake the perilous office of representing the insolent demagogue, and no artist dared model a mask of his features, the poet himself proceeded to play the part, and appeared in the character, with his face besmeared with the dregs of wine, as had been the wont of the first rude actors, in the days of Thespia. Of the comedies of Aristophanes it is excessively difficult for a modern reader to form any thing approaching to an accurate judgment. His wit is expended on topics and involved in allusions to events so purely local, locally political and ephemeral, that it requires the closest acquaintance with the occurrences and characters of the day, the temper of the people, and the every-day circumstances of Athenian life, to enable a person to appreciate and understand, much more to enjoy his wit or humor. Indeed, his very wit is so inextricably mixed up and interwoven with buffoonery, coarseness, and positive filth, that it is difficult, if not impossible, for a person at the present day, of refined tastes and decent manners, to find any thing, apart from the purity of the style, the dexterity displayed in the management of the language, "in all its shades of difference," as Professor Anthon has well expressed it, "from the most familiar dialogue to the lofty flights of dithyrambic song," which will not disgust, rather than amuse him. It must be remembered, however, that what we now call elegance, decency, and delicacy, were things utterly unknown and incomprehensible to the ancients, whether of Greece or Rome—that the foulest things were habitually spoken of in public, by their broadest, plainest, and coarsest names, without hesitation on the part of the speaker or disapprobation on that of the hearers. The audiences at the theatres were men only, for women among the ancient Greeks had little more personal freedom than they now have among the Turks, and were restricted as closely to the *gynæceum* as are the ladies of the East to the limits of a Moslem harem. This restraint, therefore, if in those days it would have been a restraint, which may be doubted, was not felt either by the comic writer or the comic actor, holding him back from flights of grossness or buffoonery, which, while delighting the groundlings, would be sure to make the judicious grieve, if there were those then frequenters of the performances of the Attic drama who would be called, in that sense, judicious. Nor was it only that the audiences of Athens were entirely composed of men, but that they were composed of all the men of all classes; that they were audiences made up of that very same fierce democracy who banished Aristides and murdered Socrates and Phocion, whose applause he had to win, and whose attention to fix and interest in the subjects which he desired to impress on them, by something akin to their natures, and congenial to their tempers

and temperaments. He certainly cannot be said to have pandered to the evil tastes and depraved inclinations of the people, even though he did condescend to catch their laughter by obscenity, buffoonery, and coarse, immoral jesting; for the boldness with which he lashed their political vices, held up the mirror displaying their own rank corruptions to their very faces, and pulled down and broke to pieces their favorite idols, refutes the charge of his flattering their prejudices or stimulating their passions in order to gain their voices. It is more probable that, living in a coarse age, his own mind actually partook of the coarseness which was a part of its nature; as it was a part of that of one whom he not a little resembles, the great satirist of the vices of the middle ages, the French Rabelais. For the most part, the men whom he most severely lashes are the very same—sophists, demagogues, and corrupt politicians—whom Thucydides condemns as the most destructive enemies of the state and misleaders of the people; and, in general, the things which he holds up to ridicule or reproach are things worthy of condemnation, on every score of morality and reason, such as the insolent ignorance and self-arrogating impudence of the base and cowardly Cleon; the scarcely concealed impiety of the misogynist and atheist, Euripides; the shallow impertinences, casuistry, and irreligion of the sophists; and last, not least, the corrupt jurisprudence of the people itself, who listened with singular forbearance and good-temper to his violent diatribes and pungent satires on their own proceedings, and the manner of their own lives. The matter which has been the most severely charged against Aristophanes is his bringing Socrates prominently forward as a subject of ridicule in his comedy of the "Clouds," a play especially directed against the sophists, of whom he erroneously, if not with intentional falsehood, represents that philosopher as the head and leader. It has been asserted that this introduction of the philosopher to the corrupt Athenian audience, in a ridiculous character, and as a subject for scorn and loud laughter, was intended as a direct measure for bringing him into popular disrepute and disfavor, preliminary to procuring his accusation and compassing his judicial murder. Not, however, to dwell on the other obvious inducements which would prompt a comic poet of no very nice perceptions or delicate feelings of propriety to bring upon the stage a celebrity and notoriety so generally known as Socrates—known, too, it must be said, for his ludicrous and grotesque ugliness of person, for his singular fits of absence and distraction, and for certain quaint vulgarities, closely bordering on affectation and charlatanry, and, if not actually such, at least the consequences and symptoms of a singular eccentricity—this accusation and the deliberate charge that he was acting in collusion with Melitus, the future accuser of the philosopher, are at once disposed of by the mention of a single fact, that 22 years elapsed between the repre-

sentation of the "Clouds" and the trial, condemnation, and execution of "Athens' best and wisest." It is also evident that Socrates did not regard Aristophanes either as his enemy or as a dangerous and disreputable character, since it is on record that he often met the comedian after his own appearance among the clouds in a basket, on terms of friendship, upon social and festive occasions; and, still more markedly, since Plato, the pupil, admirer, follower, and posthumous eulogist of the murdered sage, speaks of Aristophanes in terms of the highest praise, declaring "the Graces to have selected his mind as their constant habitation," habitually reading his works, and, above all, recommending to the elder Dionysius, as worthy of his perusal and study, with a view to "learning to know the state of Athens," this very play of the "Clouds," which is pretended to have been the first move in the conspiracy against the master of the poet's eulogist. Nor is this testimony of Plato's conclusive only in relation to the charge against the comedian as an accessory to the ruin of the philosopher, but, taken in connection with the familiarity of Socrates, goes far to show the real nature of his alleged coarseness and buffoonery, and the light in which they were regarded by the first men of the day and the country. They were, in a word, either regarded as legitimate means for producing ends consonant to patriotism, reason, and true morality, or, what is far more probable, they were not looked upon as vulgarity, buffoonery, and filth at all, in that corrupt and obscenely thinking and speaking age, but as somewhat broad and free-spoken wit and humor, just as words written or spoken in the court of King Charles II. would have elicited general applause from the courtiers, the utterance of which would now consign the utterer to lifelong banishment from the society of decent people. Aristophanes was an industrious and voluminous composer, having published above 60 comedies, and gained many prizes. Eleven of his comedies are still extant: "The Acharnians," "The Knights," "The Clouds," "The Wasps," "The Peace," "The Birds," "The Women celebrating the Festival of Ceres," "The Lysistrata," "The Frogs," "The Females met in Assembly," and "The Plutus"—the last, a middle comedy, as it is termed by the grammarians, attacking general, rather than peculiar, vice, without the introduction of real characters or of much direct personality. The purity of the style of Aristophanes is, it may be said with too much justice, the only thing that is pure about his works; still they cannot be dispensed with by the student of Greek letters, since probably from no other existing sources can he learn so much of the domestic life, the social manners, the working of the polity, and the general tone of thought in Athens, as from these somewhat more than ribald compositions, the wit of which will hardly charm the modern reader. The best editions of Aristophanes are that of Knuter, that of Brunck, and that of In-

vernizzi, continued by Beck and Dindorf, beside some editions of separate plays of rare excellence by Mitchell, who has also ably translated some of the number, and by Prof. Felton of Harvard university.

ARISTOTLE, perhaps the greatest philosopher of ancient times, born 884 B. C., at Stagira, or Stagirus, as it is written by some ancient authors, a Greek colony of Macedonia, near the mouth of the Strymon river, whence his appellation of "the Stagirite." Both his father Nichomachus, the private physician of king Amyntas, who was the grandfather of Alexander the Great, and his mother Phaestis, seem to have belonged to the Macedonian nobility. His history offers so many mythical, fabulous, and quite uncertain points, that we refrain from giving in this sketch of his life any thing but the facts generally admitted by classical scholars. He studied for a short time at Atarneus, in Asia Minor, and at 17 years of age went to pursue his studies in Athens, where he resided for 20 years. He was a pupil of Plato, whom he sincerely admired, though opposed to him in philosophy. Plato was accustomed to call him, on account of his enthusiasm for knowledge and his restless industry, the "intellect of his school." About 848 B. C., Philip of Macedonia made him the teacher of his son Alexander, at that time 18 years old. His influence on this gifted youth and king was for many years very great and salutary, and Philip rebuilt, at his request, the city of Stagira, which had been destroyed, and erected there, in a pleasant grove, a school called Nymphæum, where Aristotle was to teach. Alexander was very grateful to him, and after the conquest of the Persian kingdom presented him with 800 talents, or nearly a million of dollars. He also sent to him whatever he discovered on his marches that was unknown in Greece, such as plants and animals for scientific examination, and is said even to have been accompanied by him in several of his expeditions. Aristotle returned to Athens, not before 381 B. C., whither he brought his scientific collections, and established a new school of philosophy in the Lyceum, a gymnasium near the city. In the forenoon he instructed his intimate pupils in a philosophical way, which lectures were called esoteric, or strictly philosophical and intimate; and in the evening he taught a large popular circle, in a more common-sense way, about plainer matters, which were called exoteric or public lectures. His philosophical school is sometimes called the Peripatetic, because he taught while walking up and down, and in the time of Plutarch the shady paths of the grove of the Lyceum were still pointed out to the traveller. His friendly relations with Alexander were at length interrupted, perhaps on account of admonitions which he sent to that conqueror when, in his later years, he precipitated himself into a dissolute and any thing but philosophic life. Yet the Athenians, bent on rebellion, suspected him of partisanship for Macedonia, and being unable

to bring against his spotless life any political charge, they accused him of impiety, and thus forced him to flee to Ohalcia, on the island of Eubœa. There he died in 323 B. C., it is not known of what disease. Only a part of his numerous writings on almost every branch of science and art, were then published; the remainder had an uncertain fate, many of them being lost, and many published only in the first centuries of the Christian era. The most important of them bear the following titles: "Organon," or "Logic," "Rhetoric," "Poetics," "Ethics," "Politics," "History of Animals," "Physics," "Metaphysics," "Psychology," and "Meteorology." His writings on mathematics, economy, and history are lost, as well as his letters, and a work called *Politica*, which contained 168 ancient state constitutions and legislations. Many books bearing his name are spurious, and it is only in the present century, since careful and learned criticism has been brought to bear upon his works, that the spurious begin to be sifted from the genuine. His style is difficult to understand, not only because of the intricacy of the subjects treated by him, but also on account of the technical terms entirely his own, the meaning of which must be learned by a careful comparison of the different relations in which they occur. This is the reason why he has so long been misunderstood. No other philosopher has exerted so large an influence on so many centuries, and on the ideas of so many nations, as Aristotle. His merits as a metaphysical thinker may be variously estimated, but his performances in natural science, which he first created, and his method of philosophy, constitute his greatness. He was the first careful observer, anatomical dissector, and psychological describer of animals. He first divided the animal kingdom into classes, described a great many animals before unknown to the scientific world, came near discovering the circulation of the blood, discriminated between the several faculties, the nourishing, feeling, concupiscent, moving, and reasonable powers of animal organism, and attempted to explain the origin of these powers within the body, and built his moral and political philosophy on the peculiarities of human organization—a course to which at last Bacon, Spinoza, Hegel, and many natural philosophers of our day, have been compelled to return. His philosophical method and peculiarity consist in what is commonly called the principle of experience, that is to say, the principle that all our thinking must be founded on the observation of facts. We must not arrange systems of ideas which contradict physical certainties, but must adapt and conform our ideas to the facts that have been critically established. By following this principle, we may safely expect to arrive at the truth or reality underlying all appearances, and to become acquainted with the very substance and original causes of things, provided we think and conclude logically. Logic is therefore the fundamental science. We cannot even, without

the strict test of logic, observe facts in their proper light, discriminate between the essential and accidental features of things, or escape self-deception and false views. We must, therefore, before all things, observe the different ways in which our mind forms its first notions, and its various and successive conclusions. We must study the meanings of language, and its manifold ways of expressing relations, and thus establish the laws of correct reasoning. Aristotle thus became the father of the science of logic, and the principles of logic which he laid down have never been superseded. It is acknowledged by Kant and Hegel, the two deepest thinkers of Germany, that from the time of Aristotle to their own age, logic had made no progress. He invented the categories, or fundamental forms of thought, universal expressions for the ever-changing relations of things, and limited their number to 10; and he devised the so-called "syllogistic," or science to form correct conclusions. He likewise became the father of modern psychology, showing how the mind creates its speculative methods and general notions; and though we cannot prove their correspondence with the reality, because there is no direct proof for things which transcend our senses and observation, that yet we are always compelled to recur to these general notions and take them for indispensable forms of thinking, if we will think at all. Thus, for example, we form a notion of what is expressed by the word "all," and though we never see and observe all things of a certain class, or much less all things together, yet we must operate in thinking with this notion of totality, or give up thinking. Correct logical reasonings built upon this category may not be susceptible of demonstration, but we cannot do without them; and so of all categories. Every science must, therefore, according to Aristotle, have a fundamental principle, which need not, and cannot be logically proved because it is in itself certain, and accepted as manifest truth by every sane person; and upon this principle every science must be constructed. The great difference between Aristotle and all his predecessors in philosophy is, that the latter began with some principle, not in itself clear and generally accepted, but invented by the imagination; thus Heraclitus began with "Fire is the substance of every thing," and "Every thing flows;" and Pythagoras with "The numerical proportions are the real substance." Aristotle, on the contrary, begins all sciences with the established facts of experience, with principles generally acknowledged, and proceeds by logic. The special difference between Aristotle and Plato, his rival for centuries in the favor of the philosophical world, is that Plato states a dualism of material objects and mental ideas; he affirms that things appearing are only the soulless shadows, the imperfect images, the perishable forms of the ideas as they exist in the divine mind, and are seen by the inner sense, the spiritual eye, and reasoning power of man.

Aristotle was of opinion that the substance of things is in and not behind the things—that it belongs not to the immaterial world, but forms whatever is permanent in the flux of outward appearances. Thus he first discriminated between the substance of things and their accidental peculiarities, and created the philosophical notions of "matter," the stuff, shapeless and without any quality, which underlies all varieties of things, and "form," which is the vital principle of all things, their "energy," causing all their variations or developments toward their appropriate perfection or aim, and which is sometimes called by him *entelechia*. The matter is no real thing, but only a possible one; it becomes the mother of every thing by the creative power of the form, giving it actual but ever-changing existence in the things of the world. Change is, therefore, only a realization of what was before possible. Herein Aristotle's views somewhat resemble the modern idea of the inherent adaptation of every thing to attain its reasonable aim, only that he is not decided as to the nature of contingency or chance. The driving energy which he ascribes to every existing form, is what we call its soul or life. He has, further, established the philosophical notions of "space" and "time," and shown their connection with matter, while he first furnished the world with what is commonly called the cosmological argument for the existence of God. He states it thus: although every single movement and existence in the world has a finite cause, and every such finite cause another finite cause back of it, yet back of this infinite series of finite causes there must be an infinite immaterial being, a first something, unmoved, all-moving, pure energy, absolute reason, God. The philosophy of later ages has labored much to show that this argument is not sufficient to compel the reason. In psychology and anthropology, Aristotle is the author of the theory of different powers of the soul, of distinct feeling, willing, reasoning, and moving powers or faculties—a theory which prevailed until called in question by some modern psychologists. The reasoning power is regarded by Aristotle not, as we should expect, as a product of the body, but as foreign to its natural organization, bestowed on it from outside, and as perfect only after its separation from the body by death—a view which has made Aristotle a favorite with many Christian theologians. In this single respect he harmonizes with Plato. His ethics and politics are sublime. Proceeding from the principle that whatever is to be the goal and highest good of humanity must not depend on casualties and ever-changing minor circumstances, but must be certain in itself, and impart to every other good its value, he maintains that the *eudaimonia*, or highest possible pleasure which is conceivable for man, is derived only from the perfect satisfaction of those faculties which distinguish him from the beasts, that is, of the reasoning powers. The dominion of the

reason over the passions, the strong energy of the will in aspiring to the highest good, are, according to Aristotle, of not so high a value as the thinking energy itself—a view which has found also many modern champions. Aristotle's political and social opinions, high-toned as they are, and founded in moral philosophy, display a treasure of wisdom and experience astonishing in his age, and merit, as they have received, the best modern sympathies. Of his earliest pupils and followers, none but Theophrastus, and he not strictly a philosopher, is worth mentioning. The age after Aristotle's death was not favorable to purely speculative philosophy, most thinking men forming for themselves an individual system of thought culled from the different schools. For 8 centuries after his death Stoicism and Epicureanism, of whose specialties we are too little informed, took the place of his philosophy in the favor of the educated world; and these were succeeded by Neo-Platonism. Nothing was done in his line of thinking, until, about 150 years after Christ, a school was founded at Alexandria to comment upon and grammatically explain the writings of Plato and Aristotle. This school endeavored to beget an enthusiasm for speculative philosophy among the educated classes, and to revive classical heathenism in opposition to Christianity. The philosophy of Aristotle was thus rendered obnoxious to the fathers of the church, and only a few sublime minds, like Boethius, ventured to defend his views. In still later times, and up to the 11th century, Aristotle was almost unknown to the Christian world, but became a favorite with the Arabians, the most learned and progressive men of the 8th, 9th, 10th, and 11th centuries. They began with translations of his writings on natural science and medicine, then studied and commented upon his other works, and were doubtless the means of saving some portions of them to posterity. Through the Arabians, the scholastic writers of the 11th century made acquaintance with his "physics" and "metaphysics," though by means of very imperfect translations; his "logic" they had, though not extensively, known before. From that time Aristotle, though sometimes disparaged as a heretic, remained for 4 centuries the authority of the Christian world in all matters not strictly pertaining to dogmas. In the 11th century the dispute between the Nominalists and Realists began to divide learned theologians; the Realists asserting with Plato that our general notions, called *universalia*, are the substance of things, that our ideas answer not only to the reality of objects, but contain their soul and life; the Nominalists, in the name of Aristotle, maintaining that these general notions are mere abstractions, inventions of the brain, not expressing the real substance of things. From the exposition that we have given, it appears that this pretended Aristotelianism was a misunderstanding of Aristotle's philosophy, which though it admits on the one hand that our general notions cannot be demonstrated to express the

full substance of things, yet at the same time asserts that they are indispensable for every purpose of thinking. But what here unjustifiably bore the name and claimed the sanction of Aristotle, is, nevertheless, one of the two great contrary systems of philosophy which reach through all ages, the one asserting the possibility of entering with our mental eye into the interior and essence of nature, the other denying this and claiming for our mind only the faculty of giving ideal images of the exterior nature, whose reality is doubtful or at least impermeable. Nominalism was for the first scholastic period unsuccessful, but during the second which lasted to the reformation it was victorious. It has ever since exerted a strong influence on modern public opinion. After the restoration of classical literature in the 15th century, the writings of Aristotle were extensively published, and his philosophy better understood; and it has been further developed by Bacon, Descartes, Spinoza, and Kant. Fichte, Schelling, and Hegel opposed it, the latter, however, adopting many of its ideas. It is, however, not so much by his philosophical system that Aristotle has wielded his enormous influence, especially as this begins only at present to be fully understood and justly appreciated, as by his logical inventions, and his method of philosophy in general. He has more than any other philosopher set the world to thinking logically, to treating science and art systematically, to banishing from the domain of science the rampant and arbitrary action of fantasy, to observing coolly before venturing to systematize, and to loving truth for its own sake. It is true that under the shield of his name, particularly in the middle ages, many ingenious but useless subtleties were passed off for logic and dialectics, and the nicest distinctions in words accepted for conscientious accuracy; but this was not his fault. While during that mediæval period, philosophy was all over the world regarded as the obedient handmaid of theology, and discarded publicly whenever at war with her, the opinion could not be avoided that there were many things true in the philosophy of Aristotle which were not true in theology. Thus he served to preserve the critical and scientific spirit through a long age of desperate darkness, which, perhaps, but for him, would have been greatly prolonged. The best books on the contents, spirit, and bearings of the writings of Aristotle, are Stahr's *Aristotelis*, 2 vols., Halle, 1880, and Franz Biese's *Philosophie des Aristoteles*, 2 vols., Berlin, 1885-'42. The best complete edition of Aristotle is that of the academy of sciences at Berlin, by Immanuel Bekker, 4 vols., Berlin, 1881, not yet completed, with Latin translations and extracts from the old commentaries.

ARISTOXENUS, a Greek writer on philosophy and music, born at Tarentum, in Italy, flourished 350 years B. C. He was, like his master, Aristotle, a man of great universality of intellect, and published not less than 450 works

on all imaginable subjects. All these works are lost excepting his *Ἀρμονία στοιχεῖα* (Principles of Harmony). This work was published in Latin at Leyden in 1562 by Gogarinus, and in 1616 in Greek by Meursius, and subsequently inserted by Meibome in the *Antiqua musica auctores* (Amsterdam, 1652, 2 vols. 4to). Aristoxenus's theories of music were opposed to those of Pythagoras, who made music dependent upon mathematics, while Aristoxenus admitted only the test of the ear.

ARITHMETIC (Gr. *ἀριθμῆς*, to count), the simplest and most ancient mathematical art, treating of numbers. The earliest history of the art is lost, but the science began, as all other sciences, with the Greeks, who called the science arithmetic, and gave the art the name of reckoning (*λογιστική*). Pythagoras, Archimedes, Apollonius, Pappus, and Ptolemy, brought the Greek arithmetic to a high state of perfection. It was, however, deficient in using letters for signs of number, and in having no mark for zero. The Indian method was introduced into Europe by the Arabs in the 14th century, and diffused over the continent by means of almanacs. It was not until the 16th century that it had assumed its modern form, and come into general use among the learned. Still another century elapsed before the common people were acquainted with this art, which now occupies so large a space in every school. Arithmetic uses only the 9 Arabic or Indian digits and a zero cipher. The introduction of a "naught," or zero cipher, constitutes the great distinction of modern arithmetic. The decimal system probably possesses no special advantages over the duodecimal, which the Greeks used, except in the employment of a "naught." A binary arithmetic would possess some advantages over either, and the great Leibnitz was an earnest advocate of its use. In a binary system 1 would represent one, 10 two, 11 three, 100 four, 101 five, &c. Arithmetic might be called the science of numbers, and in its higher parts is called the theory of numbers, but it is taught in most of our schools simply as a mode of reckoning. It finds the sum and the difference of numbers, the product of one number multiplied by another, and the quotient of one number divided by another, and uses the modifications of these processes called extracting roots and raising powers. This is its extent as an art; but its usefulness is great, as it must always be the connecting link between higher mathematics and their purely practical applications. "Chase's Arithmetic" is a very compact elementary treatise; for further studies in the science of numbers, Gauss's *Disquisitiones Arithmeticae*, and Legendre's *Theorie des Nombres*, are standard works. Warren Colburn of Massachusetts introduced the Pestalozzian method of teaching arithmetic in this country, and his treatises on the subject have been succeeded by a great variety of excellent practical works by American authors.

ARIUS, a native of Libya, an Alexandrian

presbyter, and the leader in the Arian heresy, though not the first who entertained its peculiar doctrines. He is variously described by writers: some represent him as distinguished for beauty, grace, learning, and eloquence; while others describe him as tall; haggard, and uncombed, and with a learning more comprehensive than profound. Admitted a deacon in 306, his ordination as presbyter was deferred for 7 years on suspicion of heresy. It is said he imbibed his notions of the nature of Christ from Lucian of Antioch (311). Condemned by a synod held at Alexandria (321), he fled to the eastern church, where he vigorously spread his doctrines, giving them in all possible ways a popular form. The eastern church received him with favor, and Eusebius of Nicomedia called a council, at which the decree of the Alexandrian synod was reversed, and Arius received into communion, and reinstated in the ministry. Eusebius of Cæsarea also interested himself for Arius, and attempted to reconcile him with the Alexandrian bishop, Alexander, by a compromise between Sabellianism and the formula of Arius, both of which he rejected. Constantine, induced by the entreaties of Constantia, his sister, joined in the attempt, endeavoring to impress the bishop that the whole affair was a logomachy. But Alexander was inexorable. Constantine, therefore, had recourse to the council of Nice in 325. This council decreed consubstantiation as the orthodox faith, deposed, condemned, and banished Arius, ordered his writings to be burned, and made it a capital offence to own them. In the East, discontent with the Nicene council, began soon to be manifest, and in a short time spread itself back to Alexandria. Constantine endeavored to check it by summoning the disaffected bishops to his presence, and banishing those who would not subscribe to the anathemas of the council. He was finally induced, through the persuasions of his sister, and many in his court, who were in sympathy with Arius, to recall and hear him. Alexander, his most powerful enemy, was dead, and Athanasius was bishop of Alexandria in his stead. Arius was reconciled to Constantine, by a careful statement of his faith, and returned to his church, and Athanasius ordered to admit him as a presbyter. Athanasius refused, was deposed and banished. Arius was ordered (336) to present himself to Alexander, bishop of Constantinople, for recognition as presbyter. Alexander also refused. But Constantine was determined. A day was therefore fixed, when Arius should be recognized. Alexander prayed publicly in the service that God would interpose. The same evening Arius suddenly fell dead in the street, some say by poison, others by the magical arts of his enemies, and others that he died of a colic. The latter opinion is probably true. Thus perished the leader of the Arian heresy, leaving his name upon a movement destined to spread more rapidly after his death than before. After the death of Con-

stantine (337) the anti-Nicene feeling was constantly becoming more general. The whole court of Constantius participated in it. An anti-Nicene council was called at Antioch (341), consisting of 90 bishops, which, by a little wavering between strict Arianism and Homousianism, deposed and banished Athanasius (who had been recalled (338) to his bishopric), and appointed Gregory of Cappadocia in his stead. The western throne had always been opposed to the Arian party, in the person of Constantine. The eastern now began to veer in its attachment to the Arian cause. At this juncture, and after opposing councils and decrees by the two parties, a joint council was solicited from the eastern and western emperors to settle the matters in dispute. There was held the council of Sardica (347). The anti-Nicene party refused to appear, and held a council of their own at Philippopolis. Each anathematized the other; but the Niceneans triumphed. Athanasius was restored (349). Constantius now favored the Arian side of the controversy again—a council at Arles (353) sustained by another at Milan (355) again deposed Athanasius, and appointed Georgius of Cappadocia in his stead, and the Nicene party and symbolum were defeated. The Arians were now divided among themselves. The strict or high Arians, being much the smaller party, denied the Nicene doctrine of consubstantiation. The Antiochene school were the semi-Arians, or Homousians. The synod of Sirmium reconciled the high Arians, and the Nicene party (357), while the semi-Arians stood out. Through their vigorous opposition, the tide of feeling began again to set against the high party (359). On the death of Constantius (361), and the accession of Julian the Apostate, the Nicene party obtained the ascendancy in the West, while in the East the Arians were in temporary power. Factions in their own body (386) weakened their strength, and prepared the way for their suppression as a sect in the Roman empire (428). Though no sect has since that time been well defined as Arian, yet the doctrines of Arianism made their appearance so late as the 16th century to harass the church, as appears from the following church order in England: "That incorrigible Arians be sent to some castle in N. Wales, or Wallingford, to live on their own labor, and none other to resort to them but their keepers, until they be found to repent of their errors." (See ARIANS.)

ARIZONA, better known as the "Gadsden Purchase," is a territory of some 80,000 square miles in extent, recently purchased by the United States from the republic of Mexico for \$10,000,000, under a treaty negotiated by Mr. Gadsden, late U. S. minister to Mexico. Arizona lies between the 31st and 33d parallels of N. latitude, and is bounded on the N. by the Gila river, on the E. by the Rio Grande, which separates it from Texas, on the S. by the Mexican states of Chihuahua and Sonora, of which it was formerly a part, and on the W. by the

Colorado river of the West. The territory is of an irregular oblong form, extending some 600 miles from east to west, and averaging about 50 miles in width from north to south. At the time of the purchase this territory was attached to New Mexico, forming part of a county of that territory, under the name of Dona Anna, but it appears to have been much neglected by the government at Santa Fé, from which it is remote. No courts have as yet (1857) been organized for the administration of justice, and with a population of some 8,000 inhabitants, the country is entirely without a legal government. The inhabitants sent a delegate to congress during the winter of 1856-'7, who presented their urgent request that the "Purchase" should be erected into a separate territory of the United States, but no definite action was taken at Washington on the subject. Arizona was a thriving and populous Spanish province 100 years ago. As early as 1687 the country was explored by a Jesuit missionary from Sonora, who established missions at various points in its fertile valleys, and having reported that the country was rich in the precious metals, a rapid emigration took place, and, in 1757, just 100 years ago, according to an old map of that date, the present territory contained more than 40 towns and villages, many of which were of considerable size and importance. At that time more than 100 silver and gold mines were in successful operation. Indeed, mining was the chief occupation of the inhabitants, yet considerable attention was paid to agriculture, the alluvial valleys producing wheat, maize, cotton, and all the fruits known to the southern clime in abundance. The Indians in the vicinity of the missions, after having been reduced to obedience by the Jesuits, and subjected afterward to slavery by the Spaniards, at whose hands they received the most inhuman treatment, finally rebelled against their cruel task-masters, and uniting with the more wild Apaches, who had never been enslaved, succeeded ultimately in driving out or putting to death nearly all the Spanish, or Mexican inhabitants. Civilization, of course, rapidly disappeared, and at the time of the purchase the country contained scarcely any white population, except a few Mexicans in the Mesilla valley, and at the old town of Tucson. The traces of the civilization to which the country had once attained, were seen in deserted ranches, here and there an adobe house, and the dimly visible ruins of once populous towns, and extensive mining operations. The most prominent monuments of this civilization still remaining are the ancient town of Tucson, and the mission San Xavier del Bac, a church edifice of remarkable size and beauty, magnificently ornamented within. The pious labors of the Jesuits to christianize the savages are still visible in the condition of the Mission Indians, the Pagagos, and Pimos tribes, who live in pueblos, or villages, and cultivate the soil, raising cattle, horses, good crops of wheat,

maize, and cotton, which latter they manufacture into cloth, and are said, in short, to possess a civilization which loses nothing by comparison with that of their Mexican neighbors. Arizona is much cut up and traversed by mountains, yet possesses many fertile valleys, capable of sustaining a large population, chief among which are the Mesilla, Rio Grande, San Pedro, Gila, Santa Cruz, &c. The Mesilla and Rio Grande valleys are the most densely populated, containing about 5,000 inhabitants, a majority of whom are Mexicans. Next in point of population is the Santa Cruz valley. The Santa Cruz river traverses the territory from north to south, disappearing near Tucson, and is supposed to reach the Gila by a subterranean passage. Many of the ranches deserted by the former inhabitants have large well-built adobe houses, which have recently been occupied by squatters. Much difficulty is likely to grow out of the questions of land titles in Arizona. The Apache Indians claim the soil by right of conquest; the former owners of the ranches, who were driven out by the Apaches, claim under the old Mexican laws, and, added to these, are the squatters' claims. The country is represented as still rich in copper, silver, and gold, and a thriving commerce is said already to have sprung up between Arizona and San Francisco.

ARJISH, or ERJISH-DAGH, the ancient Argæus, the loftiest mountain of Anatolia, lying 18 miles S. from Kaisareyeh, and 117 miles N. by W. from the head of the bay of Iskenderoon, in lat. $39^{\circ} 8' N.$ and long. $35^{\circ} 40' E.$ It ascends in an insulated peak to the height of 13,100 feet. It is distinctly visible at a distance of 160 miles, and it was believed by the ancients that both the Euxine and Mediterranean seas could be seen from its summit. It was formerly a volcano, and its sloping sides are covered with volcanic cones and craters, and present a black and desolate appearance. Its summit is covered with perpetual snow, and the natives of the surrounding country affirm that of all the efforts which have been made to scale its frozen steep none have within their knowledge been successful.

ARK. I. A chest or coffer. Such is still its use in the north of England, where a square box, like our meal chests and used for the same purpose, is called an ark. II. It is also used to designate a kind of flat boat used on our western rivers. III. But the term is now principally a scriptural one, and as such stands for 3 different objects: 1. The vessel constructed by Noah, according to Gen. vi., and which was made of gopher wood, pitched within and without, and destined to float Noah and his family and the animals which by divine appointment he was to receive in it, over a sea which was to deluge the earth, and destroy every living thing. The form of the ark, if we may conclude from the term by which it is designated, was that of an oblong chest, while its dimensions, as given by Moses, were 300 cubits in length, 50 in breadth,

and 80 in height. Two questions have been raised, with a design to throw discredit on the account of Moses. The first as to the form of the ark, that it was not adapted for floating—the second, as to its dimensions, that it was not large enough to answer the purposes for which it was designed, and which he says it actually served. Both to strengthen and to obviate the objections raised, many curious speculations have been resorted to, to prove the basis of calculations. The length of the cubit is generally set down at 21 inches, which would make the ark 512 feet in length, 87 in breadth, and 52 in height. No very valuable results have been attained on either side of this question. The religious traditions of nearly all nations speak of a deluge and a similar vessel, constructed to outlive the destruction of all things else. (For a more detailed account of the ark see Calmet.) 2. The ark of bulrushes in which Moses relates himself to have been exposed by the edge of the river Nile, to save him from the destruction ordered by Pharaoh. 8. The ark of the covenant, or testimony, among the appointments of the Jewish tabernacle and temple. This was built of shittim wood, inlaid and overlaid with pure gold. Its dimensions were about 3 feet and 9 inches in length and 2 feet 7 inches in width and height. Its location was in the holy of holies, or the inner sanctuary, separated from the outer by a veil. The cover of this ark was the mercy seat—over which stood the two cherubim, and floated the cloud of the divine glory. The contents of the ark of the covenant were the tables of the law received by Moses (from which the ark had its name), the pot of manna, Aaron's rod, and a copy of the book of the law. The Jews esteemed this ark peculiarly sacred. It was made to be carried in procession before them in the journey to the promised land, and for this purpose was committed to the care of the Kohathites, and none were permitted to touch it but the tribe of Levi. Uzzah, having put forth his hand to steady it, in the attempt to bring it back from the Philistian captivity, was smitten unto death. It probably never was returned from the captivity of Babylon—and Josephus expressly says that when Jerusalem was taken by Titus, there was nothing in the sanctuary. All ancient systems of religious worship had arks or coffers for the reception of such things as were deemed sacred.

ARKANSAS, a county in the E. S. E. part of the state of the same name, is bounded on the E. by White river, and intersected by the Arkansas, both of which are navigable by steamboats nearly the whole year. The surface is level, and about one-third of it is occupied by Grand Prairie, the largest in the state. This prairie is fertile and suited to the culture of corn and cotton. In 1850 the productions were 116,585 bushels of Indian corn, 4,204 of peas and beans, 10,712 of sweet potatoes, and 8,769 bales of cotton. The public schools numbered 95 pupils. Capital, Arkansas Post. Pop. 8,-

245, of whom 1,588 are slaves. Area, 1,200 sq. m.

ARKANSAS, one of the states of the American union, is classed on the maps as a western state; while in its climate, productions, and institutions, it has more affinity with the southern states. It takes its name from a now extinct tribe of Indians who spoke the Osage language. Arkansas is situated between lat. 38° 30' N., and between long. 89° 45' and 94° 40' W., having an extent of 240 miles from north to south, and varying from 170 to 250 miles from east to west, the narrowest part being on the south line and the broadest on a parallel of lat. 36° N., including an area of 52,198 square miles. The state is bounded N. by the state of Missouri and a parallel of 36° 30' N. E. by the St. Francis river, which also separates it from Missouri, and the Mississippi river, which divides it from the states of Mississippi and Tennessee, S. by the state of Louisiana and the parallel of 38° N. and the state of Texas, and W. by Texas and the Indian territory. The state is divided into 54 counties, as follows: Arkansas, Ashley, Benton, Bradley, Calhoun, Carroll, Chicot, Clark, Columbia, Conway, Crawford, Crittenden, Dallas, Desha, Drew, Franklin, Fulton, Greene, Hempstead, Hot-spring, Independence, Izard, Jackson, Jefferson, Johnson, Lafayette, Lawrence, Madison, Marion, Mississippi, Monroe, Montgomery, Newton, Onachita, Perry, Phillips, Pike, Poinsett, Polk, Pope, Prairie, Pulaski, Randolph, Saline, Scott, Searcy, Sebastian, Sevier, St. Francis, Union, Van Buren, Washington, White, Yell. There are no very populous cities or towns in this state. The oldest settlement is Arkansas Post, the chief town of Arkansas county on the river of the same name, about 50 miles above its junction with the Mississippi. It was settled by the French in 1685, and contains some 500 inhabitants. Little Rock, the state capital, is also situated on the Arkansas river about 800 miles above its mouth, in lat. 34° 40' N. and long. 92° 10' W. It was founded in 1820, is built on a commanding bluff, contains about 3,500 inhabitants, and is a place of considerable business and traffic, communicating, as it does, by steamboats with the principal towns on the Arkansas and Mississippi rivers. Among its public buildings are a state-house, penitentiary, U. S. arsenal, and half a dozen churches. It has 2 or 3 weekly newspaper offices. Van Buren, on the left bank of the Arkansas, in Crawford county, near the western border of the state, is a thriving town, as is also Fort Smith a few miles above, on the right bank. Both these towns do a prosperous business with the traders and travellers between St. Louis, Mo., and Santa Fé, New Mexico. Van Buren contains about 1,500 inhabitants and Fort Smith 2,000. The other principal towns are Batesville, the chief town of Independence county on the White river; Helena, Phillips co., on the Mississippi; Fulton on the Red river; Warren, Carrollton, Marion, Princeton, Pine Bluff, Camden, Bolivar,

Eldorado, Fayetteville, Washington, Clarks-ville, &c., containing populations of from 400 to 1,200 each.—The population of Arkansas in 1850 was 209,897, of whom 162,189 were whites; 608 free persons of color, and 47,100 slaves. The following table will show the increase in population, both slave and free, from 1820, the year after Arkansas was organized as a territory, to 1854:—

Censuses.	Whites.	Free Col'd.	Slaves.	Total.
1820	12,579	77	1,617	14,273
1830	25,671	141	4,576	30,388
1840	77,174	465	19,985	97,624
1850	162,189	608	47,100	209,897
1854	187,319	614	59,397	247,113

Of the free inhabitants in 1850, the number born within the state was 68,206; in Virginia, 4,787; North Carolina, 8,772; South Carolina, 4,587; Georgia, 6,867; Alabama, 11,850; Mississippi, 4,468; Louisiana, 1,096; Tennessee, 33,807; Kentucky, 7,428; Ohio, 1,051; Indiana, 2,128; Illinois, 3,276; Missouri, 5,828; New England states, 542; other states, 2,307; European countries, 1,628. The employments of the free male population over 15 years of age (40,785) were, in 1850, as follows: agriculture, 28,942; labor, not agricultural, 5,684; commerce, trade, manufactures, mechanic arts, and mining, 4,296; army, 38; navigation, 106; law, 224; medicine, 449; divinity, 288; other pursuits requiring education, 676; governmental service, 110.—Arkansas has no sea-coast, but is remarkably favored with navigable streams. The Mississippi river washes its eastern border for a distance of 8 degrees, separating it from the states of Tennessee and Mississippi, though by its tortuous course the actual distance is probably between 300 and 400 miles. The Arkansas river, one of the largest tributaries of the Mississippi, having its source by numerous branches high up in the Rocky mountains, traverses the state by a tortuous route through its centre, the general direction being from N. W. to S. E. for a distance by the course of the stream of about 1,500 miles, and is navigable far above the limits of the state into the Indian territory. The Red river, a large navigable stream which rises in New Mexico, flows through the south-west corner of the state, affording commercial facilities to the counties of Sevier, Hempstead, and Lafayette. The St. Francis river rises in the Ozark mountains of Missouri, forms the boundary between Missouri and Arkansas for a short distance, runs through the north-eastern corner of the state, and empties into the Mississippi a short distance above Helena. Although a large river, its navigation is rendered difficult by numerous rafts or snags. For a distance of some 50 miles the river spreads out into a lake of from 5 to 20 miles in width, supposed to have been produced by a sinking of the earth caused by the great earthquake of 1811. The St. Francis is 450 miles in length, and navigable for 160 miles at favorable seasons of the year. White river rises in the north-west corner of Arkansas, and, after running north into Missouri, returns into Arkansas,

takes a south-eastern zig-zag course, and empties into the Mississippi some dozen miles above the mouth of the Arkansas. White river is about 600 miles in length, and is navigable for small steamers to Batesville, 260 miles from its mouth, and, when cleared of snags and drift-wood, may be ascended at favorable seasons at least 400 miles. It has numerous tributaries rising in Missouri, the chief of which are the Black or Big Black and Spring rivers. The former takes a southern direction and joins White river 30 or 40 miles below Batesville, and is navigable for steamers during the greater part of the year, a distance of 100 miles. The Washita or Ouzachita rises in the western part of the state, south of the Arkansas river, runs in a south-eastern direction parallel with that stream, passing through a beautiful and fertile portion of southern Arkansas, thence running south through a portion of Louisiana, empties into the Red river near its junction with the Mississippi. It is navigable for about 350 miles from its mouth. Its chief tributaries are the Little Missouri, Sabine, Saline, Bayou Boeuf, &c. The Ozark mountains, commencing near Little Rock, north of the Arkansas river, stretch away in a north-western direction beyond the borders of the state, but seldom rise to an elevation beyond 1,500 or 2,000 feet. They are composed chiefly of limestone, clay, slate, sandstone, greenstone, and granite. South of the Arkansas is the Masserne range, which is so barren that the gray sandstone of which the mountains are mainly formed, is the prevailing color of the landscape.—The physical conformation of Arkansas presents great variety. The eastern portion of the state, bordering on the Mississippi river, including a strip ranging from 30 to 100 miles in width, is low and flat, covered by dense forests interspersed with swamps and small lakes or ponds, frequently of stagnant and unhealthy water. This portion of the state is annually overflowed by the floods of the Mississippi, Arkansas, and other rivers. Passing west, the surface gradually rises, and near the centre of the state the country becomes hilly, and the forests are interspersed with rolling prairies. Still further west these hills terminate in the Ozark mountains, and beyond these is an extensive elevated plain continually increasing in height in its course toward the Rocky mountains, in which it finally terminates. The valley of the St. Francis river in the north-eastern part of the state, is a continuous swamp, filled with shallow lakes and bayous, and covered with a heavy growth of cypress, gum, and sycamore, the cypress growing in the water, and the other trees in the marshes or swamps. Rising into the higher land, where the soil is comparatively dry, the surface is covered with a growth of white oak and hickory, with occasional thickly set cane-brakes.—The mineral wealth of Arkansas is as yet comparatively undeveloped. It is known that the state abounds in cannel, anthracite, and bituminous coal, which is found in greatest profusion along the

banks of the Arkansas river on either side, from a point a short distance above Little Rock to the western boundary of the state. Iron ore of a good quality has been found in the Ozark mountains. Zinc ore exists more extensively in Arkansas than any other state in the union except New Jersey. Galena or lead ore, frequently bearing silver, abounds in various parts of the state. Gold has been discovered in White county, but has never been profitably worked. Manganese is very abundant, and, according to De Bow, Arkansas contains more gypsum than all the other states in the union. Near the hot springs in the Washita valley, is an immense bed of superior oil-stone, or novaculite, said to be equal to the celebrated Turkish oil-stone. Salt of very good quality is produced from the saline springs in the vicinity of Washita and elsewhere.—The soil of Arkansas varies from the richest and most productive to the most sterile; and the climate and productions are equally varied. The river bottoms, composed of a black alluvium deposited from the higher lands by the floods of untold centuries, are wonderfully fertile, producing bountiful crops of cotton, corn, tobacco, sweet potatoes, melons, peaches, grapes, and various other fruits. The soil is well adapted to sugarcane, but the climate is not sufficiently warm. There are also immense tracts of submerged bottoms equally rich, which might be brought under cultivation by a judicious system of drainage. Rising from the valley, the soil becomes less productive, and in many places will not repay cultivation; while large portions of the uplands, particularly in the northern part of the state, produce good crops of wheat and other grain, as well as the best of apples, and are well adapted to grazing, which is carried on to considerable extent. The uplands are largely interspersed with rolling prairies, which are generally well watered, though Grand Prairie, 90 miles long and 30 broad, situated between Arkansas and White rivers, is an exception, being almost entirely without water. The low valleys are entirely destitute of good water, the inhabitants resorting to rain water, which is collected and kept in large tanks sunk into the ground, and filtered river water. These valleys are very unhealthy, particularly to the unacclimated. The more elevated portions of the state are quite salubrious.—The climate of Arkansas is temperate, but subject to sudden changes in consequence of the north winds. The temperature at Little Rock usually ranges from 15° to 99° F., and averages 62° 66', though the mercury has been known to fall as low as 8°. The mean temperature for the winter months—Dec., Jan., and Feb.—is 45° 82'; for June, July, and August, 79° 66', the mercury reaching 90° or above for from 40 to 50 days during the summer. Terrific thunderstorms prevail during the spring and summer. Nearly 8 inches of rain fell in this state during the month of April, 1850.—The productions of Arkansas are mainly agricultural. The area of the state, in acres, is

83,406,720, of which, in 1850, only 2,598,314 acres were laid out in farms, and only 781,530 acres were under improvement; though the amount is now (1857) much greater. The cash value of these farms in 1850 was estimated at \$15,265,245. The value of farming utensils was put down at \$1,601,296; live stock, consisting of horses, asses, mules, cattle, sheep, and swine, \$6,647,969; animals slaughtered, \$1,163,818. The produce of the state for the same year was 27,187,600 lbs. of ginned cotton, 182,595 lbs. of wool, 1,854,239 lbs. butter, 30,088 lbs. cheese, 192,338 lbs. beeswax and honey, 63,179 lbs. rice, 218,936 lbs. tobacco, 199,639 bushels wheat, 8,047 rye, 8,893,939 maize, 656,188 oats, 285,738 peas and beans, 198,832 Irish potatoes, and 788,149 sweet potatoes. The value of orchard products was \$40,141; of home-made manufactures, \$638,217. The people of Arkansas as yet pay very little attention to manufacturing. According to the census of 1850, the number of manufacturing establishments in the state producing each \$500 and upward annually, was only 271, of which 3 were cotton factories. The capital invested was \$388,154; raw material and fuel consumed, \$286,999; and the aggregate product per annum was \$668,815.—A state census was taken in 1854, of which only a few details have been published; but from such as are accessible, it appears that there were in the state 5,025,926 acres of land laid out in farms, the improvements on which were valued at \$22,846,247. Of the lands under cultivation, 256,666 acres were in cotton, and 600,513 acres in grain, producing 160,779 bales of cotton, 11,536,969 bushels of corn, 833,585 bushels of wheat, and 1,040,206 bushels of oats. The value of city lots and improvements was estimated at \$2,558,170; sawmills, \$174,535; tanneries, \$24,200; distilleries, \$2,946; household furniture, \$66,465; pleasure carriages, \$97,496; horses over 2 years old, \$2,766,504; do. mules, \$878,873; do. asses, \$74,608; do. neat cattle, \$1,701,120; stock in trade of all trades, \$1,885,047; loans over debts, \$405,705; steamboats and ferries, \$61,945; gold watches and jewelry, \$116,803; capital employed in manufactures, \$16,220; slaves over 5 and under 60 years of age (40,612 in number), \$22,728,825—making the total taxable property of the state \$55,887,884, being an increase of \$20,841,499 in 4 years, from 1850 to 1854. The tax for the latter year was \$146,488.—The state is remarkably well stocked with wild animals, valuable for their meat, hides, and furs, among which are the buffalo, deer, elk, beaver, otter, rabbit, raccoon, wild cat, catamount, wolf, and bear. Wild turkeys, geese, quails, and various other birds, are also found in great abundance.—The chief exports of the state are cotton, maize, wool, hides, and lumber, which find a market in New Orleans, through which port Arkansas receives her foreign merchandise. A thriving domestic commerce is carried on along the Mississippi, Arkansas, and other navigable streams of the

state; and the traffic with the Indians on the western border is of considerable importance.—Among the most striking natural curiosities in the state are the famous hot springs, which are much visited by the curious tourist as well as the invalid, the waters being regarded as beneficial to those suffering from the effects of mercury in the system, rheumatism, stiffness of the joints, &c. These springs are situated on a small tributary of the Washita, about 6 miles from that river, and 60 miles S. W. from Little Rock, in Hot Springs county. They are remarkable both for their numbers and the high temperature of their waters. From 75 to 100 of these springs, varying in temperature from 105° to 160° F., issue from a lofty ridge of sandstone overlooking the town, while a number rise from the bed of Hot Spring creek, which flows at the foot of the ridge, and, by reason of the springs, is rendered sufficiently warm for bathing in midwinter. High upon the ridge, and within a few feet of a hot spring, issues a spring of pure cold water. In Pike county on the Little Missouri river, is a natural bridge, which is quite a famous curiosity; and near by is a mountain of very fine alabaster. The mountainous portions of the state frequently exhibit bold and pleasingly picturesque scenery.—Arkansas has no state asylums, or institutions for the instruction of the deaf and dumb or the blind, nor for meliorating the condition of the insane; and the institutions for general education are by no means equal to those of the south-western states generally. The census returns for 1850 report 353 primary and public schools, with 355 teachers and 8,449 pupils; 90 academies and other schools, with 126 teachers and 1,407 pupils, and 3 universities and colleges, with 14 teachers and 150 students. The state contains 16,935 white adults, who are unable to read and write, being a fraction more than one-fourth of the entire white adult population. The secretary of state, who is *ex officio* state commissioner of common schools, in a late report complains that the returns from the school officers are exceedingly imperfect; and that while the sale of school lands granted by congress would create a large fund, so that "the great obstacle to the organization of common schools is not so much a deficiency in the means to sustain them," as "the indifference that pervades the public mind on the subject of education."—Nine weekly newspapers are published in Arkansas, with an aggregate circulation of 7,250, or 877,000 copies annually.—The most numerous religious denominations in the state are the Methodists and Baptists. The former have 168 churches, valued at \$27,070, with accommodations for 14,250 worshippers; the latter, 114 churches, with accommodations for 14,730, and church property worth \$21,870; the Presbyterians, 25 churches, accommodating 7,200, and church property worth \$28,275; Roman Catholics, 6 churches, accommodating 1,400, and church property worth \$6,650; the Episcopalians, 2 churches, accommodating 350;

the Unionists, 5 churches, with accommodations for 1,800 worshippers. There are several other minor religious sects in the state, making the total number 362, with accommodations for 60,226 worshippers, and church property valued at \$39,325.—The constitution of Arkansas provides for a legislature composed of a senate of not less than 17 nor more than 33 members, to be elected from single districts for a term of 4 years; and a house of representatives, which shall consist of not less than 54 nor more than 100 members, to be chosen from counties every 2 years. The present senate consists of 25 members, and the house of 75. The legislature hold sessions biennially, on the first Monday in November, and members receive \$3 per diem, and \$3 for every 20 miles of travel to and from the capital. The executive power is vested in a governor, who holds his office for 4 years, but is ineligible for more than 8 years in a consecutive term of 12 years. He receives a salary of \$1,800 per annum, and the free use of the executive mansion. He must be a native of the United States, and a citizen of Arkansas for 4 years preceding his election. General elections are held biennially on the first Monday in August; and every white male citizen of the United States, who shall have been a citizen of Arkansas for 6 months preceding an election, may vote in the county where he resides. Soldiers of the U. S. army, and sailors and marines of the U. S. navy, are excluded from the elective franchise. The elections must be held *visa voce* unless otherwise ordered by the legislature. A secretary of state, auditor of public accounts, and state treasurer, are elected by the legislature in joint ballot. The judicial power of the state is vested in a supreme court of 3 justices, having appellate jurisdiction only (except in particular cases pointed out by the constitution), holding 2 terms annually at Little Rock; 7 circuit courts, having original jurisdiction over all criminal cases not expressly otherwise provided for; exclusive original jurisdiction of all crime amounting to felony at common law; original jurisdiction of all civil cases not recognizable before justices of the peace, and all matters of contract where the sum in controversy exceeds \$100; county courts and justices of the peace. The judges of the supreme court are elected by the legislature for 8 years, and the circuit judges by the people for 4 years. The constitution prohibits the legislature from enacting laws for the establishment of lotteries and the sale of lottery tickets; also forbids the emancipation of the slaves of the state without the consent of their masters, and guarantees jury trial to slaves charged with crime. Arkansas has 3 representatives in the popular branch of congress, and is entitled to 4 electoral votes for president of the United States. There are no banks in Arkansas.—The state has done nothing as yet in the way of internal improvements beyond the establishment of post roads, and the improvement of some of her navigable streams, though a number of railroads have been pro-

jected. Among these are the Cairo and Fulton road, starting at Ohio city, Mo., opposite Cairo, Ill., crossing the S. E. corner of Missouri, traversing Arkansas diagonally (via Little Rock) from N. E. to S. W., and passing thence to Houston, Texas; the Memphis and Little Rock road, extending from a point opposite Memphis, Tenn., in a western direction to Little Rock; the Helena and Little Rock road, starting from Helena on the Mississippi, running west to Little Rock, and thence in the same direction to Van Buren and Fort Smith, and into the Indian territory; a road from Fort Smith to run eastwardly and connect with the New Orleans, Opelousa, and Great Western road at Vicksburg, Miss.; a road from Fort Smith running north to Batesville, and thence into Missouri to connect with the South-western Pacific road; and a road from Helena running in a north-western direction to Yellville. Of the above roads, only the Cairo and Fulton, and Memphis and Little Rock, are in course of construction. —Arkansas was originally a portion of the territory of Louisiana, purchased from the French under the administration of Thomas Jefferson, in 1803, for the purpose of commanding the mouth of the Mississippi river. Arkansas remained a part of Louisiana territory till 1812, when the present state of Louisiana was admitted as a member of the American union, and the remaining portion was organized as Missouri territory, which name it held till 1821, when the state of Missouri was admitted to the union, and Arkansas was erected into a territory bearing its present name. It remained under a territorial government till June, 1836, when a constitution was formed at Little Rock, and Arkansas became an independent state of the American confederacy. In 1854 the state debt of Arkansas amounted to \$4,260,574, of which \$1,848,184 was for interest accrued and unpaid. Since that time certain state bonds have been cancelled, reducing the state debt to \$3,319,586.

ARKANSAS RIVER, the largest tributary of the Mississippi, after the Missouri, rises in the Rocky mountains, in about 42° N. lat., passes from the Indian territory into the state of Arkansas, through the middle of which it sweeps, and empties into the Mississippi, after a course of over 2,000 miles. Its navigation is unobstructed by shoals or rapids. It passes first through arid plains, then through a fertile country, and, for 40 miles above its mouth, through an inundated forest.

ARKEKO, or **ARKIKO**, a seaport town of Abyssinia, on a bay of the Red sea, lat. 15° 35' N. long. 39° 25' E.

ARKLOW, a maritime town and parish of Ireland, county of Wicklow, on the Avoca, 39 miles S. S. E. of Dublin. It is situated about 500 yards from the point at which the river pours into the sea. Pop. in 1851, 8,800.

ARKWRIGHT, **GEORGE**, great-grandson of the inventor of the spinning frame, born Aug. 30, 1807, died in London, Feb. 5, 1856. He was

a barrister-at-law, a magistrate for Derbyshire, and member of parliament for Leominster on several occasions. His election was due to his family connections, rather than to his qualifications.

ARKWRIGHT, **SIR RICHARD**, inventor, born at Preston, Lancashire, Dec. 28, 1732, died Aug. 3, 1792. He was the youngest child of a family of 13, and his parents were too poor to give him any education. He earned his living as a barber, shaving in a cellar for a penny, till he was 80, when he became acquainted with a clock-maker of Warrington, named Kay, with whom he attempted to construct a perpetual motion. At that time English cottons were made with only the twist of cotton, the warp being of linen, and it was considered impossible to spin cotton so as to make it applicable as warp. Moreover, the supply of twist was short of the demand, though Hargreaves of Lancashire had shortly before invented his jenny, and had several machines at work in Nottingham. Such was the state of things in 1768, when Arkwright produced a model of a new machine for spinning cotton thread, but fearing the same hostility that had driven Hargreaves away, he proceeded at once to Nottingham. There he met with the Messrs. Wright, bankers, who engaged to furnish the capital necessary to perfect the invention, but these gentlemen soon became frightened, and retired. Arkwright then applied to Messrs. Need and Strutt, and the last, being a good machinist, saw at once the value of the invention, and the firm took an interest in it. Arkwright was profoundly ignorant in mechanics, but a few suggestions of Mr. Strutt about the wheel-work, overcame the last difficulty, and a machine driven by a horse was soon in operation. In 1771 another mill, driven by water power, was established at Cromford, in Derbyshire. The first patent was granted in 1769, and unsuccessfully contested in 1772. In the year 1775 Arkwright obtained a new patent for improvements, but it seems he had included in it things discovered before, and 6 years later it was declared void by the courts, but in 1785 he obtained a decision in his favor, and was reinstated in the monopoly. The object of Arkwright's invention was to spin cotton fine, and with a hard twist, and fit for warp. This was done by the use of drawing-rollers, by sets of two, each succeeding set moving faster than the last, thus extending the cotton between them, and by a fast revolving spindle giving the twist to the cotton as it came out from between the last pair of rollers. The introduction of this machine, which was far superior to that of Hargreaves, caused the latter to die of grief. Arkwright was well repaid for his ingenuity. As a manufacturer he accumulated a fortune of \$2,500,000. He was elected sheriff of Derbyshire, and was knighted on the occasion of presenting an address to the king. His invention enables one man to do as much work as 180 could do before, and it is calculated that

40,000,000 hands would scarcely be sufficient to accomplish the spinning now done by machinery in England alone.

ARLAND, JACQUES ANTOINE, a miniature painter, born at Geneva in 1688, died there in 1748. He practised his art in Paris, where the regent was one of his pupils, and afterward in England, where he acquired the friendship of Sir Isaac Newton. He made a fortune, and in 1729 returned to his native country.

ARLANGES, JOSEPH MARIE GASTON D', a French marshal, born in the village of Maresché, in the department of Sarthe, Sept. 1, 1774, died July 18, 1848. On the outbreak of the revolution he emigrated with his family, and fought for the cause of royalty under Condé, and in the Vendée under Antichamp. Subsequently he took an active part in the war with Spain, and especially won fame by his exploits in Africa. He distinguished himself at the first capture of Mascara, but failed in the expedition of Tlemcen under Marshal Clausel in 1836.

ARLES, one of the oldest cities of southern France, on the left bank of the lower Rhone, at the point where the river divides into 2 branches to enclose its delta or the island of Camargue, 46 miles N. N. W. of Marseilles. It is an ill built, dirty, and somewhat unhealthy place, but enjoys great historical celebrity. An important town on the invasion of Cæsar, who calls it Arelate, it afterward became a Roman colony, and was long large, rich, and populous. Its amphitheatre, although not as well preserved as that of Nîmes, is superior in size and magnificence. An Egyptian obelisk, consisting of a single block of granite about 54 feet in height, is yet standing on one of the public thoroughfares, while the ruins of an aqueduct, of 2 temples, of a triumphal arch, an extensive cemetery, and numerous fragments of granite and marble columns, are to be seen in different parts of the dilapidated city. The beautiful statue known as the Venus of Arles, a rival to the Venus de' Medici, was discovered here in 1651, and is now in the imperial museum at Paris. The Roland tower, and the Byzantine church of St. Trophime, must also be mentioned, as also the town hall, designed by the illustrious Mansard. Arles, moreover, contains a school of navigation, a college, a collection of natural history, a museum of antiquities, a public library, and a theatre. Silk, soap, and glass bottles are manufactured, and the sausages of Arles are in high esteem. Pop. 20,286. Arles is celebrated for the beauty of its women, in many of whom the Roman physiognomy is preserved in a striking manner. In their head-dress, too, many of them remain faithful to the ancient Roman customs.—The CANAL OF ARLES was constructed to obviate the difficulties in the navigation of the Rhone and Durance, has 2 branches starting from the city of Arles; the one, running S., ends at Port Bouc, on the sea, E. of the eastern mouth of the Rhone, the other running E. joins the Durance opposite to Cade-

net. It is also connected with the canal of Beaucaire, and consequently with that of Languedoc, so that it has become the centre of a considerable and growing trade.

ARLINCOURT, VICTOR, viscount d', a French poet and novelist, born 1789, died Jan. 22, 1856. His father, a farmer of the public revenue, was one of the victims of the revolution, but left him the greater part of his wealth. Victor commended himself to Napoleon's notice by publishing, in 1810, an allegorical poem, entitled *Une matinée de Charlemagne*, in which the vanity of the emperor was taken by flattering allusions. The writer was rewarded by being appointed at once an equerry to Madame Mère (such was the title of Napoleon's mother), and an auditor under the council of state. He next undertook an epic poem, the hero of which was still Charlemagne, or rather Napoleon himself under that name, but it was unfinished on the fall of the empire. D'Arincourt now had to change his poetry as well as his political opinions. This was very easily done, as he had a natural preference toward the Bourbons. He did not, however, meet with the favor he expected at the hands of Louis XVIII., but consoled himself by giving his whole attention to literature. The publication of his *Caroléide* was soon followed by that of a novel, *Le Solitaire*, which made a decided hit; at least it became an object of admiration to some, though it was laughed at by many. Whatever its intrinsic value, it certainly drew a good deal of attention, was dramatized at one of the principal theatres, and burlesqued at two others. Then appeared, in succession, *L'Etranger*, *Le Renégat*, and *Ipsibot*, which increased the equivocal fame of their author. But the most singular events of his literary career were the publication of a novel in rhyme, *Imaëlie, ou l'amour et la mort*, which was marked by more eccentricities than the preceding works, and the performance at the French theatre of a tragedy, *Le Siège de Paris*. The most extraordinary lines, the oddest combination of syllables producing the strangest confusion of ideas, were received with such bursts of laughter that the actors did not attempt a second performance. When the laughter had subsided, D'Arincourt fell into comparative obscurity, but was afterward called out again by the revolution of 1830. Then, under the disguise of so-called historical novels, he published several regular satires on the government and men of the time. After 1848 he turned his attention to politics still more decidedly, and published two pamphlets, *Dieu le veut*, and *l'Italie Rouge*, in which he uttered such gross calumnies against the democratic leaders that he was brought to account before a court of justice, and sentenced as guilty of libel. This somewhat quieted his hot spirit, and from that time he lived in retirement.

ARLON, a town of Belgium, capital of the province of Luxembourg, 104 miles S. E. from Brussels. It is seated on an eminence sur-

rounded by forests, and has an active trade in grain, and manufactures of woollen stuffs. It is the ancient Orolanum, and possesses a number of antiquities, coins, and busts of heathen divinities, which have been discovered near it. It was pillaged in 1793 by the French, after a victory gained in the neighborhood over the Austrians. During the wars of Louis XIV. it was several times captured by the French and Spaniards.

ARMADA, SPANISH, the great naval armament sent by King Philip II. of Spain, in 1588, for the conquest of England, in order thereby "to serve God, and to returne unto his church a great many contrite souls that are oppressed by the heretics, enemies to our holy Catholic faith, which have them subject to their sects, and unhappiness." (*Expediti. Hispan. in Angl. Vera Descriptio*, A. D. 1588.) The fullest account of this armament is given in a book published, about the time it set sail, by order of Philip, under the title *La Felicissima Armada que el Rey Don Felipe nuestro Señor mando juntar en el Puerto de Lisboa 1588. Hecha por Pedro de Paz Salas*. A copy of this work was procured for Lord Burleigh, so that the English government was beforehand acquainted with every detail of the expedition. (This copy, containing notes up to March, 1588, is now in the British museum.) The fleet is therein stated to have consisted of 65 galleons and large ships, 25 *urcas* of 800 to 700 tons, 19 tenders of 70 to 100 tons, 13 small frigates, 4 galleasses and 4 galleys, in all 180 vessels, with a total tonnage of 75,868 tons. They were armed with 2,481 guns, of which 1,497 were of bronze, mostly full cannon (48 pdrs.), culverines (long 80 and 20 pdrs.), &c.; the ammunition consisted of 123,790 round shot and 5,175 cwt. of powder, giving about 50 rounds per gun, at an average charge of 4½ lbs. The ships were manned with 8,052 sailors, and carried 19,395 soldiers and 180 priests and monks. Mules, carts, &c., were on board to move the field artillery when landed. The whole was provisioned, according to the above authority, for 6 months. This fleet, unequalled in its time, was to proceed to the Flemish coast, where another army of 80,000 foot and 4,000 horse, under the duke of Parma, was to embark, under its protection, in flat-bottomed vessels constructed for the purpose, and manned by sailors brought from the Baltic. The whole were then to proceed to England. In that country Queen Elizabeth had, by vigorous exertions, increased her fleet of originally 80 ships, to some 180 vessels of various sizes, but generally inferior in that respect to those of the Spaniards. They were, however, manned by 17,500 sailors, and therefore possessed far more numerous crews than the Spanish fleet. The English military force was divided into two armies, one, of 18,500 men, under the earl of Leicester, for immediately opposing the enemy; the other, 45,000, for the defence of the queen's person. According to a MS. in the British museum, entitled "Details of the English Force Assembled

to Oppose the Spanish Armada," (MS. Reg. 16th c. xxi.), 2,000 infantry were also expected from the Low Countries. The armada was to leave Lisbon in the beginning of May, but, owing to the death of the admiral Santa Cruz, and his vice-admiral, the departure was delayed. The duke of Medina Sidonia, a man totally unacquainted with naval matters, was now made captain-general of the fleet; his vice-admiral, Martinez de Ricalde, however, was an expert seaman. Having left Lisbon for Corunna for stores, May 29, 1588, the fleet was dispersed by a violent storm, and, though all the ships joined at Corunna with the exception of four, they were considerably shattered, and had to be repaired. Reports having reached England that the armament was completely disabled, the government ordered its own ships to be laid up; but Lord Howard, the admiral, opposed this order, set sail for Corunna, learned the truth, and, on his return, continued warlike preparations. Soon after, being informed that the armada had hove in sight, he weighed anchor and accompanied it on its way up the channel, harassing the Spanish ships whenever an opportunity presented itself. The Spaniards, in the mean time, proceeded to the coast of Flanders, keeping as close together as possible. In the various minor engagements which took place, the handier ships, more numerous crews, and better seamanship of the English, always gave them the victory over the clumsy and undermanned Spanish galleons, crowded as they were with soldiers. The Spanish artillery, too, was very badly served, and almost always planted too high. Off Calais the armada cast anchor, waiting for the duke of Parma's fleet to come out of the Flemish harbors; but it soon received word that his ships, being unfit for fighting, could not come out until the armada had passed the straits and driven off the Anglo-Dutch blockading squadron. It accordingly weighed again, but, when in sight of Dunkirk, was becalmed between the English fleet on one side and the Dutch on the other. Lord Howard prepared fire-ships, and when, during the night of Aug. 7, the breeze sprang up again, he sent 8 of them among the enemy. They produced a perfect panic in the Spanish fleet. Some ships weighed anchor, some cut their cables, drifting before the wind; the whole fleet got into confusion, several ships ran foul of each other and were disabled. By morning order was far from being restored, and the several divisions were scattered far and wide. Then Lord Howard, reinforced as he was by the ships equipped by the nobility and gentry, as also by the blockading squadron under Lord Byron, and ably seconded by Sir Francis Drake, engaged the enemy at 4 A. M. The battle, or rather chase (for the English were evidently superior on every point of attack), lasted till dark. The Spaniards fought bravely, but their unwieldy ships were unfit for the navigation of narrow waters, and for a moving fight. They were completely defeated, and suffered severe loss. The junction

with the duke of Parma's transports having thus been foiled, a landing in England by the armada alone was out of the question. It was found that the greater part of the provisions on board had been consumed, and as access to Spanish Flanders was now impossible, nothing remained but to return to Spain to lay in fresh stores. (See "Certain Advertisements out of Ireland Concerning the Losses and Distresses Happened to the Spanish Navie on the Coast of Ireland," London, 1588—Examination of Emanuel Fremosa, who served in the San Juan, 1,100 tons, flag-ship of Admiral Ricalde). The passage through the channel being also closed by the English fleet, nothing remained but to round Scotland on their way home. The armada was but little harassed by the fleet of Lord Seymour sent in pursuit, as that fleet was badly supplied with ammunition and could not venture on an attack. But after the Spaniards had rounded the Orkneys dreadful storms arose and dispersed the whole fleet. Some ships were driven back as far as the coast of Norway, where they fall on the rocks; others foundered in the North sea, or struck on the rocks on the coast of Scotland or the Hebrides. Soon after, fresh storms overtook them on the west coast of Ireland, where above 30 vessels were lost. Those of the crews who escaped on shore were mostly killed; about 200 were executed by command of the lord deputy. Of the whole fleet not more than 60 vessels, and those in the most shattered condition, and with famine on board, reached Santander about the middle of September, when the plan of invading England was definitively given up.

ARMADILLO, (*Dasypus*, Linn.) a genus of the class *mammalia*, and order *edentata*, forming a small but distinct family, intermediate between the sloths and ant-eaters and having an affinity to the families of *chlamyphorus* and *orycteropus*. They are distinguished by the possession of molar teeth only. The armadillos have, however, a far more obvious, though possibly less scientific characteristic, in their singular coat-armor, by which, instead of hair, their whole bodies and head are covered and protected. This armor consists, in all the species, of 3 bony bucklers, all composed of small polygonal plates set in juxtaposition to one another, but neither connected by joints nor separately movable, so as to form a sort of mosaic pavement. The bucklers which cover the rump and shoulders of the animal, forming, as it were, each, a single solid piece, are capable of little pliancy or motion save what is allowed during the life of the animal by the partial elasticity of the thin shell or crust lubricated by the animal oils which penetrate it. These bucklers, however, are connected by a number of transverse movable bands, composed of similar plates with the principal bucklers, which are themselves connected by the soft and pliant inner skin of the animal, and are thus rendered perfectly accommodating so as to admit of the most varied and rapid motions,

being situated immediately above the loins, to which region are assigned all the principal movements of animal economy. The buckler or helmet, which defends the head of the armadillo, has no connection of any sort with the armor of the shoulders, so that the neck is left perfectly free, while it is, at the same time, completely protected by the projection of the skull-piece, which defends the nape in the same manner as was done by the corresponding piece of an ancient helmet of the middle ages. Indeed, the whole arrangement of the defences of this singular creature bears so strong a relation to those of the man-at-arms of the 14th century, that if it were not the inhabitant of a continent unknown to the armorers who equipped those doughty knights in plate and mail, one could hardly doubt that the steel armor of the *bimano* had been copied from the scaly or bony panoply of the quadruped; the principal feature in both systems being the defence of the upper and lower portions of the body by solid and inflexible cuirasses and tuiettes, connected by flexible coverings to the central regions, strong enough to give protection, yet pliable enough to permit active motion. The legs of the armadillos are extremely short and stout, covered with scaly plates, furnished with powerful claws for burrowing in the ground, beneath which they form their habitations, and guarded, so far as to the knees, by the defending bucklers; which descend so low as to make a complete defence to the belly of the animal, which is covered only with a rough skin, from which originate a few long coarse hairs, and a partial one to the thighs and knees. Except in one species, which will be named hereafter, the armadillos are devoid of hair, save that above mentioned, and a few straggling bristles, which proceed from the inner skin, between the jointed plates of the lumbar region. The tails of all the species but one are armed with annular bands similar to those connecting the bucklers, and, in all, are adapted to a notch cut out of the posterior buckler in order to receive them. The teeth of the armadillos are of simple cylindrical form, varying from 7 or 8 to 17 or 18 in number, on each side of each jaw, and are so arranged, having interstices between them, that when the mouth is closed they shut one into the other, like those of a steel-trap. They have variably, in the different species, 4 or 5 toes on their fore feet, and invariably 5 on their hind feet. Their eyes are small, their ears erect and pointed; and they have elongated snouts, like those of the hog or ground-mole, to enable them to turn the ground in search of roots or worms, which constitute a portion of their food. They are mostly nocturnal in their habits, though a few of the species go abroad by day; perfectly inoffensive; are never known to bite, or attempt any defence; but when pursued immediately commence burrowing, which they do with such power and rapidity, that if they have the least start, they easily evade their pursuers, burying

themselves to any depth in the ground, from which they can only be expelled by introducing smoke or water into their subterranean galleries. So tenacious is their hold on the earth, when endeavoring to escape, by their strong, curved claws, that, if seized by the tail, they will leave it in the hand of the captor rather than forego their grasp. The ordinary food of armadillos consists of fallen fruits, roots, worms, ants, and carrion. Azara states that where armadillos abound, ants are never found, since those animals break into their hills and devour them as greedily as do the true ant-eaters. They are also said to break into the graves and devour the dead bodies, unless protected by brickwork. Their grinding teeth enable them only to feed on soft substances; and, therefore, they can devour flesh only when putrid. Abundance of this disgusting food they find, at all seasons, on the pampas of South America, where thousands of cattle are slaughtered weekly, for the sake of their hides alone, and left to putrefy on the plains. On this food the armadillos become immensely fat, when they are esteemed a great delicacy, not only by the Indians, but by the Spanish and Portuguese residents; and are served up, roasted whole in their shells, as one of the choicest culinary luxuries of the country. The armadillos were formerly classified according to the number of the jointed bands between the more solid portions of their armor; and were named after the same supposed characteristic, as it might be, the 3-banded, 8-banded, or 16-banded armadillos. It has subsequently, however, been ascertained that the number of bands is not a specific distinction; but varies according to age, sexual difference, and, perhaps, individual formation. They have, therefore, been arranged by Cuvier in 5 small groups, according to the arrangement of their teeth, toes, and other structural differences. 1. The *cachicameas*; with 4 anterior toes, 7 teeth on a side, above and below, a pointed muzzle, and a long, annulated tail. 2. The *aparas*; with toes and tail as the last species, but with 9 or 10 teeth on each side, above and below. This animal has, also, the power of rolling itself into a ball like a hedgehog, in which condition it has been thrown over precipices without receiving any injury. 3. The *enocuberts*; with 5 anterior toes and 9 or 10 teeth, throughout. In addition, however, they have 2 teeth on the intermaxillary bones of the upper jaw resembling incisors, in which they differ, not only from all armadillos, but from all the order *edentata*. 4. The *kabassous*; which have 5 toes both before and behind, but the claws obliquely arranged, so as to give them unusual power in burrowing and clinging to the soil when seized. They have 9 or 10 teeth, throughout; and their tails are undefended by armor, as in the other species. 5. The *prionontes*; or last subdivision of the armadillos, in addition to the unequal toes and enormous claws of the *kabassous*, have from 22 to 24 small teeth, throughout, on each side of all the jaws. Of the *cachicameas*, or first

division, there are 8 species; of which the commonest is the *dasypus paba*, or black tatu of Paraguay. It is about 16 inches in length, and was originally known under the appellations of the 7, 8, and 9-banded armadillo; 8 species being made out of 1. The other species of this group are the mule tatu, so called from the length of its ears, and the tatu *verdadero*, hardly distinguishable from the last, except by the breadth of the movable bands, and the size of the croup buckler. Of the *aparas*, there is but one species, the *mataco*, which has, in general, but 8 bands and a short, blunt tail, covered by a single horny crust. The *enocuberts* have 3 species; the *poyou*, or yellow-footed armadillo, which has, usually, but 7 or 8 movable bands, and is easily known by his triangular snout, flat body, and short legs; the hairy armadillo, remarkable for its more copious growth of bristles from between the movable bands, and from its practice of burrowing into the bodies of dead horses, at whatever spot is first decomposed, and remaining within them until all the flesh is consumed, and nothing left but the skeleton and hide; and, lastly, the *pichi*, which is the smallest of all the armadillos. The *kabassous* has but one species, the *tatouaay*, or wounded armadillo, so called by the Indians from an idea that the scaly covering of its tail, which is naked and looks raw, has been torn off by violence. The last subdivision of armadillos, the *prionontes*, has, likewise, but one species, the *dasypus gigas*, or great armadillo of Cuvier. It is remarkable for its size, being 3 feet 8 inches in length; for its movable bands, 12 or 13 in number, composed of rectangular plates; for the thickness of its tail at the base; and for the spiral lines of the scales by which it is defended. All the armadillos are inhabitants of South America, being found dispersed from Guiana and Brazil, over the pampas of Buenos Ayres, and south as far as Paraguay. For an animal of so unwieldy a form and so short-legged, the armadillo runs with remarkable speed, easily outstripping a man; and, what is still more worthy of remark, although the females in no species have more than 4 mammae, and in some but 2, they invariably produce 6 or 8, or even 10, young at a birth, bearing but once in a season—the former feature being almost an anomaly in natural history; as the number of the young produced at a birth, in any species, may be calculated, generally, unless in exceptional cases, by the number of teats on the dam, almost to a certainty.

ARMAGEDDON. Within the ancient territorial limits of the tribe of Manasseh was the celebrated Mount Carmel, at the foot of which, and on the western border of the great plain of Esdraelon, lay the city of Megiddo, which, true to its magnificent name ("the city that spoils"), had been the witness of many sanguinary and disastrous conflicts. Robinson, in his "Biblical Researches" (1838), expressed his conviction that the city now known as Lejjün, and to the Romans as Legio, occupies the site

of the ancient Megiddo. This conviction was strengthened by his last visit to the same region in 1852. The opinion of Dr. Robinson is grounded on the similarity of the topography assigned to Megiddo by the Scripture writers with that of Legio, as described by Jerome and Eusebius, and with that of Leijôn; as also on certain architectural remains found by him in the latter city. If Megiddo is at length identified, we find in its topography a reason for its renown in the wars of the Holy Land, as also for the fact that the Israelites, although so aggressive, never willingly joined battle on the plains of Esdraelon, and when they did, were almost always unsuccessful. On this plain, "by the waters of Megiddo," took place the battle of Kishon, whose result is celebrated in the refrain of Deborah and Barak, the battle of Jezreel, in which Gideon triumphed over the Midianites, the battle of Gilboa, where Saul was defeated and slain by the Philistines, and finally, the battle of Megiddo, in which Josiah experienced a similar fate at the hands of Pharaoh Necho. Megiddo and Esdraelon are classic ground in the history of war, consecrated to strife from Joshua to Napoleon—for here, too, was the last fierce fight of the crusaders with the victorious Saladin, and here Bonaparte defeated the Syrians in 1799. Armageddon was not probably the name of any particular mountain peak, but the general title applied to the elevated table-land of Esdraelon, and so called because Megiddo was the principal military post of the entire plain, the term *Ar-Mageddon* signifying "mountain of Megiddo." Armageddon was, therefore, the great battle field of Palestine. In the mountainous north the Israelites gained a speedy possession, but the superior cavalry of the level south defended the occupancy of the original owners. Armageddon was the boundary line between the foes. How beautifully in this light does the Apocalyptic vision (Rev. xvi. 16) describe God as summoning his foes to a place called Armageddon, to "the battle of the great day of God Almighty."

ARMAGH, a city, borough, and parish of Ireland, capital of the county of Armagh, and the archiepiscopal seat of the Irish primate. It is well built, has a public library and an observatory. Between the 5th and 9th centuries there was here a celebrated school of divinity and letters, frequented by great numbers of students. Pop. 8,849.

ARMAGNAC, the name of an ancient family of Gascon sovereign princes. Very powerful during the 14th and 15th centuries, they were finally broken down by the implacable Louis XI. Some of them deserve to be specially noticed. I. JOHN I., count of Armagnac, aided the count of Eu, high constable of France in the war against the English, in Gascony and Guyenne; was president of the estates of Languedoc in 1355, and refused to pass under English dominion after the treaty of Bretigny; made war against the count of Foix, who took

him prisoner; joined the Black Prince to re-establish Don Pedro IV. on the throne of Castile, and died in 1378. II. BERNARD VII. made himself known by his enterprise and audacity in southern France; but when the murder of Louis I., duke of Orleans, brother of Charles VI., by the emissaries of John the Fearless, duke of Burgundy, left the Orleanists without a chief, he married his daughter to young Charles of Orleans, and became the leader of the faction which henceforth assumed the name of Armagnac. He succeeded in seizing on Paris, which he governed with an iron rule. At last the Parisians became tired of his tyranny, and by treason delivered the city into the hands of L'Île-Adam, one of the Burgundian chiefs. Bernard hid himself for a while, but was finally betrayed by a mason, to whom he had confided, and was put into prison. A few days later, June, 1418, the jails were mobbed by the Burgundian populace, when all the Armagnacs were murdered, Bernard among the rest.—III. JOHN V., son of John IV., born toward 1490, made himself notorious by the rashness of his uncontrollable passions, and even went so far as to marry his own sister, Jane Isabella, who had been engaged to King Henry VI. of England. This monstrous crime was made a pretext by Charles VII. for depriving him of his possessions, which were afterward restored to him by Louis XI. Notwithstanding this kindness, John entered the league of the public weal, and Louis resolved to take revenge on him. The count was obliged to seek a refuge in Aragon. A few years later, he succeeded again in regaining possession of his territory by entering into an alliance with the duke of Guyenne, the younger brother of Louis XI. The forbearance of the king was exhausted: he sent against the count the cardinal of Alby, who besieged John in the castle of Lectoure, forced him to surrender, and had him perfidiously murdered under the eyes of his own wife. The unfortunate woman herself being pregnant, was obliged to drink of a poison which killed both herself and her unborn child, 1478.

ARMAND, CHARLES, marquis de la Rouarie, a French officer, who served in the American army during the revolutionary war. He received the commission of colonel in May, 1777. In 1781 he went to France to obtain supplies, but returned in time to join the army at Yorktown. In 1783, at the solicitation of Washington, congress gave him the appointment of general of brigade. He afterward returned to his native country, and took part in the French revolution. He was present at the bloody massacres of La Vendée, but on hearing of the execution of Louis XVI. was completely overwhelmed; his health gave way, and he died Jan. 30, 1793.

ARMANSBERG, JOSEPH LOUIS, count von, president of the regency instituted over Greece, after her independence of Turkey was established, born Feb. 28, 1787, in Lower Bavaria, died April 8, 1858. He studied at the uni-

versity of Landsbut, and in 1808 entered the civil service. In the wars of 1813, '14 he was commissioner of Bavaria in the allied army, and belonged to the board which governed the conquered regions on the Rhine. In 1815 he participated in the congress of Vienna, was one of the plenipotentiaries with the allied army during the occupation of France, and administered a large district of that country. From 1816 to 1828 he occupied various elevated offices in Bavaria, and gave proof of great activity, decision, and organizing capacity. In 1825 he was chosen president of the chamber of deputies, and became leader of the moderate opposition. King Louis, on ascending the throne, intrusted Armasperg with projecting and carrying out various reforms, and finally made him his secretary of the treasury and of foreign affairs. He was one of the founders of the German Zollverein. He constantly cared for the material interests of his country, and for the advancement of the positive sciences. He was ever a stern opponent of the Catholics in Bavaria, both in the royal council and in the chambers. In this conflict he forfeited the confidence of the king, who was led to believe that Armasperg aimed to make a tool of the sovereign. He then retired into private life, but was recalled by the king to take the regency of Greece during the minority of King Otho, according to the protocol signed May 7, 1832, in London, by the great powers. With his royal ward he landed in Nafplia toward the end of Jan. 1833. He was created chancellor of state, and ruled until 1837, with almost limitless power. His administration was in many respects beneficial, but he finally became unpopular with the nation, the sovereign, and the foreign diplomatists, then all-powerful in Athens, Sir Edmund Lyons, the English minister, alone excepted. He was dismissed in Feb. 1837, left Athens in March, returned to Bavaria, and retired to country life on his estates.

ARMATOLIO (Mod. Gr. *ἀρματολίου*, land of arms), the name given to 18, or, according to others, to 17 districts, situated amid the mountains of northern Greece, and subject each to the authority of an armatol. The armatols were Christian captains who, after the establishment of the Ottoman empire in Europe, succeeded in maintaining themselves independent in the possession of inaccessible mountain defiles. The armatolices of Macedonia, Epirus, and Thessaly, were the last refuge of the liberty and independence of old Greece, and they preserved, during centuries, the germ of the regeneration of the Hellenic nation. The warlike chiefs of these districts became more and more formidable to the Porte, and their bold attacks obliged the pashas, near the beginning of the 17th century, to treat with them, and upon condition of their peaceful conduct to allow their right to govern their mountain country. These advances encouraged the armatols, who daily increased in power, till under their direction the war of Greek independence broke out. Those

of the armatol chieftains who most distinguished themselves in this war, were Eustrates, the leader of 500 men; Zongas, killed in 1827 before Athens; Karaiskakes, leader of 600 men, and who perished under the walls of Athens; Kaltzodemos, killed before Missolonghi; Odysseus, Karataeo, and Marco Bozzaris, the commander of the Suliotes.

ARMENIA, a country occupying the north-east portion of Turkey in Asia, lying S. E. of the Black sea, having a trend of N. W. and S. E., with an angle of 45° from lat. $37^{\circ} 30'$ to $41^{\circ} 31'$ N., and comprising an area of 49,096 sq. m. Ancient Armenia was somewhat more extensive, though its boundaries, especially the western and southern, for lack of natural determinations, were in almost constant change during the political struggles of which it was the arena for nearly 2,000 years. Taken in a wide acceptance as to time, ancient Armenia may be bounded, or rather indicated, as extending from the eastern side of the Euphrates (until 190 B. C., a part of Armenia, known then as Armenia Minor, was on the west of the Euphrates; soon after the division it was absorbed into the neighboring states) to the Koordistan mountains, and from the Black sea to the Buhtan, which divided it from the country of the Karduchians. Thus indicated, Armenia includes the eastern basin of the Euphrates so far south as the modern town of Bir in Mesopotamia, the northern half of the valley of Tigris, the western slope of the Koordistan mountains, the entire basin of the Tchouk, and the head-water valley of the Koor. It is an elevated table land (being part of the great plateau of Iran), supporting on the western slope of the Koordistan mountains the lake Van, at an elevation of 5,467 feet above the sea-level. It is well watered by 5 principal rivers (Euphrates, Tigris, Koor, Aras, and Tchouk), and their tributaries, which find their way into the Black and Caspian seas, and the Persian gulf, traversed by 3 lofty chains of mountains (Bin Gheul, a branch of the Caucasian in the north, the Taurus in the south, and the Koordistan on the east), and interspersed with numerous lakes. In geological aspect it gives indications, by the trap and porphyritic composition of its mountains, and the evident volcanic character of the higher peaks, that it has been the subject of a mighty upheaval. Volcanic action is not yet extinct, an eruption of Ararat having occurred in 1840. Armenia abounds in silver, lead, iron, copper, rock salt, and mineral waters. Trap and porphyry are principally confined to the north—the salt formations are central. The principal lake is Van, which lies in a basin formed by the Koordistan, Karih, Amadiab, and Taurus mountains, and has an area of 2,000 sq. m. The climate of Armenia is severe. Winter lasts from October to May, the summer is short and warm, and the transitions of temperature are abrupt. It is, nevertheless, generally regarded by travellers as a healthy region. Its agricultural resources are good, but a large portion of

the land is unimproved. It is best adapted to cereal products and grazing. Its principal cities are: 1. Erzurum, situated on the head-waters of the Kara Su, founded in 415, an important military station under the Byzantine emperors, and now under the Turks, and a halting place for caravans. Pop. 40,000. It is in the present pashalic of the same name. 2. Kars, situated in the pashalic of Kars, 100 miles east and north of Erzurum, on the head-waters of the Aras, and has a military importance. It was captured by the Russians in 1855, but was restored by treaty, soon after. Pop. 12,000. 3. Moosh, situated on the Murad Chai, 88 miles south of Erzurum, in the pashalic of Van. It has some manufacturing importance, and is the seat of some western trade. Pop. 7,000. 4. Bayazid, situated in the north-east part of the pashalic of Van. Pop. 2,000. 5. Van, on the lake of the same name. Van has some importance from the manufacture of cotton fabrics, the raw cotton being imported from Persia. 6. Batoum, situated on the Black sea, near the mouth of the Tchouk, in the pashalic of Kars. 7. Bitlis, on an affluent of the Tigris, in the pashalic of Van.—The Armenians call themselves *Haiks*, from *Haig*, whom they assign to the time of Belus (2200 B. C.), and consider a descendant of Japhet. They relate that Haig emigrated to Armenia on account of the oppressions of Belus. Herodotus considers the Armenians of Phrygian origin, Strabo of Thesalian. They derived the name of Armenians, or Aramides, from Aram, who lived about 800 years after Haig, and, by his warlike exploits, first gave his subjects political importance, and so a name. But they soon lost their political importance, under his son, and became tributary to Assyria, until the middle of the 8th century B. C., when they again became independent. This independence they maintained until 825 B. C., when they became subject to Macedonia for 180 years, and again (190 B. C.) free, availing themselves of a defeat of Antiochus the Great by the Romans. Armenia was now divided into Major and Minor Armenia, and governed respectively by two Armenian nobles, Artaxias and Zariadras. Zariadras soon lost the independence of Armenia Minor (in the fall of Mithridates); Armenia Major remained quietly under the government of the Arsacids until 84 B. C., from which time she became the subject and arena of perpetual struggles between the Romans and Persians, with various fortunes to herself, until A. D. 887, when, by compact between Theodosius and Sapor, the disputed territory was peacefully partitioned. Over eastern Armenia, Sapor, through motives of policy, appointed as viceroy a descendant of the Arsacids. But in less than 40 years this last vestige of independence passed away, and Persia now directed her energies to eradicate the Christian religion from her subjugated province, and substitute in its place the doctrines of Zoroaster, and then religious persecution added its weight to political oppression. But the dis-

tresses of Armenia did not end even here. From 682 she was the arena of a violent struggle between the Grecian and Mohammedan powers, till 857, when the Mohammedans obtained possession. Soon after, through the intrigues of Ashdod, commenced the Bagratide dynasty, which continued till 1079, when it was brought to a close by the assassination of the last prince of the line, and Armenia suffered a triple dismemberment to the Greeks, Turks, and Koords. An inconsiderable emigration afterward established a principality north of Cilicia, important only in history from the aid it rendered to the crusades, a century later. This principality was subjugated by the Mamelukes in the 14th century, and thus ends Armenian nationality. Since that time the Armenians have been simply plunder for any nation which has had a surplus of brute force to expend. Overrun by the Ottomans (1588), by the Persians (1604), Armenia has arrived at a second tripartite division to Russia, Turkey, and Persia. Of this division Mount Ararat is the departing point, the Russian power extending to the north and east, and forming her trans-Caucasian territory—the Persian to the east and south, over the province of Arubijan, and Turkey to the north and west, making the pashalics of Erzurum, Trebizond, Van, Kars, and Diarbekir.

ARMENIAN CHURCH. Though Christianity was known in Armenia so early as the 2d century, it was not until the 4th century that it may be regarded as having obtained a foothold. In 302 Tiridates, the last of the Arsacids, and many of the Armenian nobles, embraced the Christian faith, and in 319 he was confirmed as the pontiff of Armenia. Christianity thus became the established religion of the land. In theology the Armenian church was at first Augustinian, adopting the Apostolic, Nicene, and Athanasian creeds. Later in her history (6th century), Monophysitic views were introduced into Armenia by Jacob Baradaeus, which led to a schism in the church, the Monophysitic branch, which was the majority, of course separating themselves from the communion of the Roman church. The two parties were violently opposed to each other, though differing but slightly in opinion. The schismatics affirmed the absorption of the human nature of Christ into the divine—the procession of the Holy Ghost from the Father alone—redemption from original sin by the sacrifice of Christ—its appropriation by baptism—and redemption from actual sin by penance and auricular confession. They adhere to the 7 sacraments of the Roman church, perform baptism by a trine immersion, believe in the mediation of saints, the adoration of images and transubstantiation, and administer the holy communion in both kinds to laymen. They deny purgatorial penance, and yet think the prayers of the pious will help the souls of the departed. Their faith has evidently less of the ascetic than that of the conservative party. The religious dissensions, and more particularly the political op-

pressions of Armenia, have scattered the Armenian church in a second Jewish dispersion. But in church polity they are subject to a central Catholicos or patriarch. Since the Russian conquest of Eriwan, the Catholicos resides at Eriwan, is proposed by the archbishops from among their number, and is appointed by the emperor. There are seven degrees of the Armenian clergy: 1, the priesthood; 2, the archdeacons; 3, the subdeacons; 4, the torchbearers; 5, the exorcists; 6, the readers; 7, the doorkeepers. The offices of these several ranks are sufficiently indicated by their titles. Owing to the lack of asceticism in the Armenian church, cloister life is not so frequent as under the Roman Catholic faith. The piety of the Armenian church has, for the last 100 years, taken a somewhat practical form of development, in the labors of the Mechitharists to circulate religious knowledge among the members of their communion, from their publishing establishment in the lagoons of Venice. The Mechitharists sprung more particularly from the conservative branch of the Armenian church. The labors of Protestant missionaries are also extending among them.

ARMENIAN LITERATURE. The Armenians, from the earliest period of their existence, through all the political disasters which have signalized their history, have always exhibited a strong love for a national literature, and a persistent tendency toward its development. Until A. D. 819, the Armenians were Parsees, at which time the Christian religion was introduced among them by Gregory the Illuminated. The literature of Armenia, until the introduction of Christianity, is contained in a few songs or ballads, which have been collected by Moses of Chorene, and Armenian civilization was only that which could be wrought out by the Zoroastrian philosophy. The new faith of the Armenians operated favorably and powerfully on their literature. At the epoch of the Christianity of Armenia, the Grecian language and learning were exciting the profoundest admiration and esteem of the eminent divines, and of the church generally. The attempt was making to bring the results of Grecian philosophy to the aid of Christian theology, as the fruit of which so many modifications crept into the popular faith. The natural result of this great attention to Greek literature was immediately manifest on the literary history of Armenia. A multitude of Grecian works were translated, commented upon, and their philosophy adopted. Thus, we may say that Armenian literature erected itself upon a Grecian basis. About this time the alphabet of 38 characters, in present use in the Armenian language, was invented by Mesrob, or, according to his own account, was received by him from heaven in a dream. In connection with its introduction the language naturally underwent many modifications both in orthography and syntax, and as a proof of the strong Grecian current that was setting in upon the Armenian mind, the language has re-

ceived its most marked features, syntactical and orthographical, from beyond the Archipelago. The ulterior purpose of Mesrob, in reducing the language to a new alphabet, was the publication of an Armenian Bible. This was commenced A. D. 411, and was the work of nearly half a century with Mesrob and his three sons, whom he had educated especially for the task. Many works were about this period translated from the Greek into the Armenian tongue. The completion of Mesrob's Bible gave a powerful impulse to Armenian learning, while it also stamped upon that learning a religious character which it has never lost. Then came the Monophysite doctrines into the Armenian church, through the missionaries of Julian of Halicarnassus, and the consequent separation of the Armenian Christians from the communion of the Greek church by the council of Chalcedon (451). From the 6th to the 10th century is the golden age of Armenian literature. The cause of its temporary decline at this period is to be found in the invasion of the Arabians in 855, when many of the inhabitants were converted to the Mohammedan faith, and many more compelled to suffer persecution for their refusal to abjure Christianity. For the next 200 years Armenia was the subject of a bitter contention between the Greeks and the Turks. But when after the fall of the Bagratide dynasty, and the subjugation of Armenia to the Greek empire, the new Armenian principality was established on the Mediterranean, literature again revived, and until the 14th century was in a thriving condition. At this epoch (1875) the territory of the new principality which had until that time been held by the Mamelukes, was wrested from them by the Ottomans, and the Armenians were again driven from their homes, and scattered, like the Jews, among the nations of the earth. From that time, the literature of the Armenians has almost steadily declined. After the migration, they established themselves in Russia, Germany, India, Asia Minor, Syria, and Egypt. Amid all the disadvantages of their position, they nevertheless preserve not only a great unity of religious faith, but the same unwearied desire to sustain a national literature. But it is at present limited to the somewhat unproductive though laudable efforts of the Mechitharists, who (1700) established themselves on a lagoon in the Venetian gulf, where they have a printing press, from which, during the last century and a half, they have issued several translations of important religious works, such as those of Philo, Chrysostom, and St. Basil. The convent and printing establishment of these monks is on the island of San Lazzaro. The monks are admirable scholars. They now publish a semi-monthly paper in the Armenian language, which is circulated and read among the scattered families of the Armenian faith. The articles for this paper are original, and written by the inmates of the institution. They are also from time to time translating and publishing the standard works of France,

Italy, England, and Germany. A recent traveller says that they print the Armenian creed, which differs little from that of the Roman church in 27 different languages, all in one volume. "I was not a little surprised," he says, "to find 'Uncle Tom's Cabin' translated by the young monk who showed us through the establishment. The library of this institution has some fine manuscripts and books. We were shown a manuscript copy of the scriptures in the Armenian language. It was most beautifully executed." (Edwards's "Random Sketches and Notes of European Travel.") The Armenian literature is not rich in poetry. A little sacred poetry is all it can boast. The Armenian language is by some writers set down as an original tongue, by others a mixed dialect from 4 languages, and so comparatively modern. It is lacking in euphony, owing to an abundance of consonants, deficient in distinctions of gender, redundant in case, inflections, and uses articles as suffixes, like the northern and less cultured languages. Byron studied the Armenian language in this convent at San Lazaro. His study, table, and chair, are shown to visitors. His teacher died in 1854.

ARMERO Y PENERANDA, FRANCISCO, a Spanish admiral and statesman, born in the beginning of the present century, commenced his naval career as midshipman in 1822. He was present at the 2d siege of Bilbao by the Carlists, during the civil war between them and the partisans of Queen Christina, and for his conduct on that occasion was promoted to the rank of lieutenant. He was soon after made captain, and raised to the command of the naval division of Catalonia. In 1840 he was minister of marine, and accompanied the queen regent and Queen Isabella to Valencia. After the events of Barcelona had compelled the queen regent to quit Spain, he retired from political life, but returned to it in 1848, and was minister of marine under the administration of Narvaez, and afterward under that of Isturitz. In 1848 he was appointed to the command of the Spanish squadron at Cuba. On his return to Spain, he took a place in the Bravo Murillo cabinet as minister of marine, but resigned the office a short time before the dissolution of the ministry. In 1855 he attained by seniority the rank of chief admiral of the fleet, and in 1857, on the retirement of Narvaez, became prime minister of Spain. His character for moderation, frankness, and integrity, and his eminent military and administrative services, have won him a high degree of respect in his native country.

ARMFELT. I. KARL GUSTAF, baron, a Swedish general, born Nov. 9, 1666, in Ingermanland, at that time a province of Sweden, died Oct. 20, 1786. As a young man he served in the army of France more than 12 years, greatly distinguishing himself by bravery. He took part, afterward, in the wars of Charles XII., served at Pultowa, and directed the heroic defence of Helsingfors against Peter the Great. He was at length defeated by Apraxin in the

battle of Stor-kyro, Feb. 15, 1714. He commanded an expedition against Norway in 1718, but was repulsed in endeavoring to capture Drontheim. After the death of Charles, he attempted to effect a retreat across the Norwegian mountains, during the severe winter of 1718-'19, and was overtaken by a storm, in which more than 600 of his men were frozen to death. Notwithstanding his repeated misfortunes, he was appointed, in 1785, commander-in-chief of the Finnish army. II. GUSTAF MORITZ, baron, a Swedish general born at Fuva in Finland, in 1757, and died at Tsarskoe-Selo in 1814. He distinguished himself in the war against Russia, and was a great favorite with Gustavus III. He rose still higher in his favor by his efforts to weaken the power of the aristocratic party to which Gustavus was strenuously opposed, and by his honorable military career. Gustavus, before he died, not only appointed him governor of Stockholm, but also made a codicil to his will for the purpose of naming him member of the council of regency during the minority of Gustavus IV. But Gustavus had not sufficient strength left to sign his name in full to the codicil; he could only put his first initial to it. The duke of Södermannland who had been previously named in the will in connection with the regency, availed himself of the defective signature of the codicil, to repudiate it, and actually threw it into the fire. Nor was the duke contented with destroying the codicil and nullifying the nomination of the king; he could not forget the preference which had been shown to Armfelt. There was still another circumstance which was calculated to incense the duke against Armfelt. He was in love with a young noblewoman connected with the court of the name of Von Rudensköld, and had reason to believe that the young lady, far from loving him, was in love with another, and that other the same man who had alienated from him the good will of his king. The duke—who, during the minority of Gustavus IV., was omnipotent in Sweden—was bent on vengeance. He caused the young lady to be sent to the house of correction, while Armfelt was dismissed from his office of governor and removed to Naples, ostensibly as ambassador of Sweden at the Sicilian court, but really for the purpose of getting him out of the way and consummating his ruin during his absence. This was done by indicting him for treason, branding him as a criminal, confiscating his property, and by taking away from him his titles and his privileges as a nobleman. A requisition for his arrest was sent out to Naples, and it was even said that an attempt was made upon Armfelt's life by murderers in the pay of the duke. He succeeded in making his escape from Naples and proceeded to St. Petersburg, but, as he was not very favorably received by the Czar, he left Russia for Germany, where he remained until 1799, when, on the advent of Gustavus IV. to the throne, he was allowed to return to Stockholm, reinstated in his former position,

appointed minister to the court of Vienna, and in 1807 general of infantry. After having taken a leading part in the war in Pomerania, and in 1808 against Norway, he resigned his office, but intended to remain in Stockholm, when a liaison with the famous countess Piper involved him again in difficulties with the Swedish police. He put himself under the protection of the Russian ambassador, who induced him to enter the service of Russia. He was raised to the dignity of count by the Russian government, appointed chancellor of the university of Abo, member of the Russian senate, and president of the affairs of Finland, in which latter country he died. Though he possessed many eminent qualities, he would never have become so extensively known to fame if it had not been for the persecution to which he was for some time subjected.

ARMIANSKOI-BAZAR, or **BAZAR OF THE ARMENIANS**, a town in the south of Russia, government of Taurida, on the principal road from Russia to the Crimea. Upward of 20,000 cart-loads of salt annually pass through it from the salt lakes of the Crimea for the supply of the south of Russia.

ARMIGER, in Roman antiquities, an armor-bearer. In England it is the Latin word for an esquire, as *miles* is for knight. All such are allowed to have a coat of arms.

ARMILLA, in Roman antiquity, a bracelet worn by Roman females and warriors, the former for ornament, the latter as rewards for distinguished services.—An ornament worn on the ankles by Africans and Asiatics; also the ring on the hinge of a door; also an anatomical term with the ancient anatomists, signifying the coverings of the 5 nerves of the brain.

ARMIN, **ROBERT**, an English player, author, and associate of Shakespeare. He was a member of Shakespeare's company of players, and his name appears in the original list of the performers of Shakespeare's plays, given in the first folio edition of his works. He translated a small Italian novel, the "Italian Taylor and his Boy," and wrote a dramatic piece entitled the "History of the Two Maids of More Clacke;" and he is alluded to by Nash in 1592 as a writer of stories and ballads. His only work which at present has either interest or value is entitled "A Nest of Ninnies, simply of themselves without compound. Stultorum plena sunt omnia. By Robert Armin, 1608." This tract is composed of dull anecdotes of the domestic fools and jesters of the time, and is interesting as showing something of the real life from which the great dramatist got the elements of the fools in his plays. Only a single copy of the original edition of this book remains, which is found in the Bodleian library. It was reprinted by the Shakespeare society in 1842.

ARMINIANS. The Arminian movement in theology may be regarded as antipodal to the Calvinistic. It takes its name from James Ar-

minius, but the doctrines of this theologian were more Lutheran, and less anti-Calvinistic than those of the Arminian party. It is difficult to trace the history of Arminianism correctly, it is so mixed up with the political and civil interests that were then occupying and disturbing the United Provinces, in their struggles with Spain. In a desperate juncture of their Spanish difficulties, the Netherlands had sent an embassy both to the French and English courts, and were about equally divided at home as to which of these powers they would offer the sovereignty of the provinces. The counsels for the English throne finally prevailed, and a deputation headed by Barneveldt, the grand pensionary, made a formal offer of the Netherlands to Elizabeth. The course pursued by the English court on this offer, divided the popular sentiment of the Netherlands into two great parties: the military, acting under Maurice the Stadtholder, the successor of William, and the civil, under Barneveldt. Barneveldt had early espoused the cause of Arminius, against the Gomarists (though himself personally more in sympathy with Gomarus), while Maurice, though an Arminian in sentiment, supported the Calvinistic theology. Thus did the theological forces of this movement lend themselves to political intrigues, and heighten the animosities of political strife with sectarian bitterness. Arminianism became identified with the cause of popular liberty, while Calvinism lent itself to Maurice, in the attempt to establish him as the sovereign of the provinces. The Arminian party drew up and presented to the states of Holland (1610) a remonstrance, and were consequently termed remonstrants. To accomplish his purpose, Maurice, who was sustained by the majority, bent his energies to securing the calling of a synod which should decide between the Calvinistic and Arminian parties, and was successful. The synod of Dort was convened for this purpose by the states-general, in 1618, nine years after the death of Arminius. At this synod, which was in session for 6 months, the Arminian cause was mainly defended by Simon Episcopius, though the Arminians were summarily expelled from the deliberations of the council, and allowed to appear only as an accused party. The Calvinistic party of course triumphed in a synod thus organized, the remonstrants were condemned, their preachers deposed, Barneveldt executed, Grotius imprisoned for life, and Calvinism declared the orthodox doctrine of the reformed church. The distinguishing tenets of the Dort Arminians may be set down thus: 1. The divine election grounds on a foreseen personal faith, in the elect. 2. Faith, and sincere (though not perfect) obedience the conditions of justification and salvation, as the perfect obedience of Adam would have justified and saved him, because Christ's satisfaction makes up the deficiency in our own obedience. 3. That on account of the redemption in Christ, none will be condemned for original sin. The Arminians were also called

Freewillers, and Semi-Pelagians, and later have been sometimes designated as Socinians, not without cause. It is at least true that many Socinians joined them. Arminianism is to be regarded only as a continuation of the anti-Nicene movement in theology, which commenced when theologians, no longer satisfied with asserting the existence of three persons in one God, first began to inquire into the mode of this existence. Though Episcopius defends himself against the charge of Socinianism, and Arminius was equally scandalized at being termed a Pelagian, yet this subordination of Arminianism to the Arian movement, in its widest sense, will be justified in the inevitable and organic sympathy historically exhibited between Arminianism and all the modified forms of the Arian faith. Pelagius and Augustine stood in the same attitude to each other in the 5th century, as Arminius and Calvin did 11 centuries later, and Calvinism was but a revival of Augustinianism. In the Nestorian, Eutychian, and Monophysite controversies, the same organic sympathy is no less generally manifest, the Alexandrian school always being the champion of Augustinism and Trinitarianism, and the Antiochene espousing the cause of Arianism and Pelagianism. Every new phase of Arianism, to this day, is infallibly Arminian, though the organic connection of the two is not so manifest from the distinctively Arminian side, at least in modern times. The large and powerful body of Methodists, both in this country and Europe, are Arminians, and yet Trinitarians, as truly as the Calvinistic or Augustinian branch of Protestantism. Arminianism has not spread in Germany (at least, until very recently, under the auspices of the Methodist missionary society), owing to the prevalent religious philosophy of that country being more favorable to the Calvinistic theology. The English church, since the time of Laud, may be considered as inclining to the Arminian side. In their forms of government the Arminian churches are generally Episcopal.

ARMINIUS, or HERMANN, JAMES, born in Oudewater, South Holland, in 1560, died in 1609. Left an orphan in infancy, he was adopted by *Æmilius*, a clergyman, and later by *Snellius*. In his collegiate studies at Leyden, he distinguished himself for theological learning. Going thence to Geneva, he maintained the same reputation, under the tuition of Beza, but became an object of suspicion to the university on account of his adherence to the philosophy of Ramus, an opponent of the predominant Aristotelianism of Geneva. He therefore retired to Basel, which university offered him the degree of D. D. when he was 23 years old. He declined the honor, saying that "for so young a face to bear that honored degree would diminish its dignity." He next went to Padua, to attend the lectures of Zabarella, and on his return to Amsterdam (1588) was received into the ministry, and appointed over the church of that place. Amsterdam was the

field of those mental conflicts through which Arminius attained the religious views that gave fame to his name and bitterness to his life. The Calvinistic doctrine of predestination had been attacked, and the church desired that Arminius should defend it, and also sustain the views of Beza against the intralapsarians of Delft. He undertook the task, but before its completion he had travelled all the way from the predestination of Calvin to the free grace of Arminius, and had entered upon the stormy sea of opposition to the dominant faith of the times. Nevertheless, because he rejected Pelagianism, he was chosen, though reluctantly, professor at Leyden (1608) to fill the chair of theology vacated by the death of Gunning. But he soon excited great opposition on account of his doctrines, as may be seen by the anagrams, which, after the custom of the times, were constructed on his name. He also opposed the requisition that the preachers should annually sign a pledge to abide by the doctrines of the confession and the catechism. This brought down upon him a storm of persecution from a set of zealots in Holland, who urged the measure. In the pulpit he was plain, persuasive, and forcible in argument, with something of acerbity both in his public and private life, probably less constitutional than the result of the strifes in which his sentiments involved him, in an age when theological dogmas were so violently discussed. The personal religious faith of Arminius is to be distinguished from that of the theological school to which he has given his name. Nor is he to be regarded as in any special sense the originator of the Arminian movement in theology. His views more nearly coincided with those of Melancthon. The faith of Arminianism was more distinctly defined by Episcopius at the synod of Dort, 9 years after the death of Arminius.

ARMINIUS, in German HERMANN, prince of the Cherusci, a German tribe, and the liberator of Germany, born about 16 B. C. At that time the Romans were more and more extending their dominion over Germany, penetrating into the interior, constructing military roads and fortified camps, subduing some tribes, and making others their allies. Many of the Germans willingly entered the Roman military service, and acquired Roman culture, customs, and manners. Among these were Arminius and his brother Flavius, who served the Romans on the Danube as leaders of an auxiliary body of the Cherusci. Arminius thus became a Roman citizen of the equestrian order, and mastered the Latin language, Roman military tactics, and policy. Returning after several years to his country, he found it smarting under the iron rule and the exactions of Varus, a Roman governor, who among other oppressions obliged the Germans to submit to the Roman civil law and to conduct their private litigations before Roman judges and through Roman advocates. He determined to liberate his country, and, if possible, to exterminate the oppressors, whose

forces numbered about 50,000 men. He organized an extensive conspiracy, and used the confidence placed in him by Varus to distribute several small detachments of Roman soldiers among different tribes, under the plea of maintaining better order among the Germans. He also prevailed upon Varus to change the direction of his march with the main body on the way to his winter-quarters on the Rhine. Thus Varus was enticed toward the Teutoburg forest, now partly the principality of Lippe and partly Prussian territory. Arminius, who accompanied him on this march, suddenly disappeared and gave the signal for insurrection. The Romans scattered in the interior were murdered, and the main body found itself surrounded on all sides by infuriated masses, among primitive forests, marshes, mountain passes, and impassable rivers. The Romans fought their way for 3 days, until almost all were exterminated, Varus himself taking his own life. From among the prisoners, the chiefs, civil and military, were sacrificed to the gods, the rest enslaved. The Germans bored holes in the tongues of the Roman lawyers and judges, saying to them, "Now rattle away." This was the famous destruction of the Roman legions which filled the eternal city and Augustus its master with grief and shame. For several days Augustus would only utter the words, "Varus, give me back my legions!" Germanicus, however, marched from Gaul to avenge the fallen, and entered Germany, but returned, after a short campaign, the same year. Among the Germans dissensions soon prevailed. Arminius carried off Thusnelda—celebrated afterward in German minstrelsy—daughter of Segestus, and married her, but she soon fell again into the hands of her father. Next year Germanicus entered with fresh troops, relieved Segestus, who was besieged by Arminius, and liberated him, but the pregnant Thusnelda was made a Roman slave. Arminius now called the Cherusci and other tribes to arms. Germanicus marched against him with 80,000 men and a large fleet on the Weser and in the Ems. He reached the spot where lay the whitening bones of the legions of Varus, and buried them with military honors. Arminius retreated until he had drawn the Romans into narrow passes, and then attacked them with such fury that Germanicus, having lost his cavalry, was obliged to retreat with great danger, and reached his vessels with difficulty; 4 legions under Cossina scarcely escaped total destruction previous to crossing the Rhine. The next spring Germanicus returned with an army of 100,000 men and about 1,000 vessels on the rivers. Beyond the Weser in Westphalia, between the present town of Hamelin and Rinteln, on a plain called the Woman's meadow, was fought the greatest battle between the Germans and Romans. The Germans were beaten, but nevertheless renewed the struggle next day, and obliged the victorious Romans to retreat. This was the last time that Roman armies invaded Germany beyond the

Rhine, and Arminius is therefore justly called the liberator. According to a legend, he disappeared in a mysterious manner during an interview on a half-built bridge with his brother Flavius, who remained attached to the Romans and tried to persuade his brother to return to them. But history says that Arminius, being proclaimed chief by the Cherusci and numerous other tribes, attacked Marbod the chief of the Marcomanni—an aggregate of various tribes in the east of Germany and on the Danube—his rival in pretensions to supreme power, who was supported by Inguimar, the uncle of Arminius. After a violent and terrible struggle, whose theatre was Saxony, and a great undecided battle, Marbod was abandoned by many of his partisans, returned again to Bohemia, and finally fled to the Romans, leaving Arminius in undisputed possession. For having attempted to exercise his authority as strictly in peace as in war, a conspiracy was organized against him, and he perished by the treachery of one of his relations at the age of 37. Thusnelda, the wife of Arminius, their son Thumelicus, born in captivity, and Sigismund brother of Thumelicus, appeared as prisoners in the triumphal cortège of Germanicus in Rome, A. D. 16. The lineage of the Cheruscan princes was extinct, with the exception of Italicus son of Flavius, brother of Arminius, who in the year 47 was given up by the Romans to the Cherusci at their request. Tacitus says that the name of Arminius was alive in the songs of the "barbarians of his time," and so it is still. It was the theme of many inflaming patriotic songs during the rising of Germany in 1813, '14, against the domination of Napoleon.

ARMISTEAD, W. K., brevet brigadier-general in the U. S. army, and for many years chief of the corps of engineers, born in 1780, died at Upperville, Va., Oct. 18, 1845. He entered the army at 18, and throughout his military career was conspicuous for his devotion to duty and for high moral worth. In the campaign of 1840, '41, he commanded the U. S. troops in Florida.

ARMOR, a defensive covering for the head, limbs, and body, used as a protection in battle. The use of armor is almost as old as history itself, and appears to be of almost universal occurrence, among all tribes and peoples, savage, barbarous, or civilized, among whom war is one of the conditions of life, while fire-arms have not prevailed to such a degree as to render defences of that nature useless. It has been asserted by superficial writers, more given to turning antithetical periods than to ascertaining facts, that the earliest forms of defensive armor were the skins of wild beasts; and many pleasing paragraphs have been penned, representing that armor, after travelling through a complete circle, from the lion's hide of Hercules to the complete plate panoply of the 14th century, had returned to its starting point and original type, in the buffcoat of the troopers of the Commonwealth, and of the times of Charles XII.

But of this there is no proof, nor indeed are there any reasons for believing such to be the case, except that the base of the ancient shield, as to this day it is among savage nations, was hardened bull's hide. The lion skin of Hercules is never described in the classics as armor, but as a cloak or robe of military honor, worn either without the armor, or above it, as by the heroes of the Iliad; while the adaptation of the heads of wild beasts, wolves, and boars, especially, to the covering of casques, was clearly a matter of decoration, worn *in terrorem*, and not of defence, like the leopard skin helmet-covers of the French dragoons of the present day, or the bear-skin crests of the English life-guards. On the contrary, from all historic evidence, we find that, from the times of the Old Testament to the fall of the Roman empire, bronze, or brass, as it is usually termed, was the material of the helmets and body armor of all the principal nations of antiquity, their shields and bucklers being variously manufactured of many folds of bull's hide bound and embossed with brass; of thin planks covered with leather, and similarly bound with brass or iron and studded; of wicker-work sheathed with wild beasts' hairy hides; or of solid metal, usually Corinthian bronze. The first form was that of the heroic buckler of Homer, covering the champion from his chin to his ancles; the second, that of the oblong and externally convex shield of the legions; the third, that of the small shields of many of the oriental nations; the fourth, that of the round bronze target of the Hellenic and Macedonian phalanx, of which those of the best quality were manufactured at Argos. —The use of iron or steel, whether for defensive or offensive arms, is comparatively recent; and it would appear that, while the ancients possessed, like the Mexicans when first discovered, the secret of tempering and hardening copper, or bronze, so that it would repel a sword-blow or pike-thrust without bending, and even carry a cutting edge, which modern skill and science cannot effect, they had not the knowledge how to temper steel. Æschylus, it is true, mentions steel (*chalybe*) as synonymous with the sword; but he qualifies the use by terming it "the Scythian stranger," thereby indicating its foreign origin and its little use in Greece, where, until a much later period, sword blades and spear heads were made of copper or bronze, not of steel or iron. —So lately even as the destruction of Pompeii, surgical instruments, scalpels, knives, and lancets, varying but little from the modern form, were made of bronze, as is clearly shown by the specimens recovered from the excavations. The Romans, however, at an early date, used steel for their weapons, probably introduced from Spain, although bronze was, to the last, the material of their helmets, breastplates, and greaves, many of which are still extant of rare beauty of workmanship, and—though of insignificant thickness, as compared with the knightly armor of the middle ages—perfectly competent to re-

sist a shrewd broadsword blow, or the dint of an arrow or javelin.—The first description of a complete panoply is to be found in the first book of Samuel, chap. xvii, in the account of Goliath, the champion of the Philistines, or Phœnicians of the Syrian coast. "He had an helmet of brass upon his head, and he was armed with a coat of mail, and the weight of the coat was 5,000 shekels of brass; and he had greaves of brass upon his legs, and a target of brass upon his shoulders, and the staff of his spear was like a weaver's beam, and his spearhead weighed 600 shekels of iron; and one bearing a shield went before him." The description above is almost identical with that given by Homer of the armature of the Greek and Trojan leaders, before Ilium; with the exception—which is undoubtedly an error in the translation—of the coat of mail; since mail, or chain-armor, was unknown to the ancients, and only came into use, with the use of wrought steel, when the northern tribes of Europe descended upon the Latin countries of the South. The earliest, as the latest, armor of Europe was plate armor; although scale armor, which has often been confounded with mail, was introduced among them from the eastern barbarians, among whom it is still, in some degree, in use. The armor of a Hellenic chief of Homer's time consisted of a high crested helmet, which could on occasion be drawn over the face, after the fashion of a knight's vizor—a short breastplate covering the chest from below the collar-bones to below the ribs, but leaving all the vital parts of the neck and clavicular region, as well as the arms, exposed; a plated waist-band worn below the breastplate, protecting flanks and belly; and, lastly, a kilt, or short petticoat, descending nearly to the knee, of cloth or leather, covered by narrow, contiguous, though separate strips of metallic plates, or scales, hinged one upon the other, so as to fall loosely and yield to every motion of the limbs, yet to afford full protection against a cross cut, and some defence against a direct thrust. To these was added the large circular shield, covering the whole man, and the greaves of bronze, beautifully moulded to the form of the legs, and sometimes covering the knee.—The same form was continued, with little change, among the Peloponnesian, Athenian, and Macedonian soldiery of the phalanx, whose array when drawn up in line, according to Xenophon, "lightened with brass, and bloomed with crimson." The Roman soldiery of the legions, to the very end of the empire, retained the same armor, still offering no protection to the throat, the upper portion of the chest, or the arms, all of which they were trained to protect by means of the oblong buckler. And this their open order and peculiar mode of fighting, every man hand to hand, as if in single combat, with the soldier opposed to him, singularly qualified them to do. The Romans, however, in later days rejected the greaves, at least for their infantry, and went into action with the legs bare and

the feet only protected by the military shoe, from which one of their emperors, Caligula, had his name.—This form of defensive armor continued until the very last days of the Roman empire, even when the seat of government was transferred to Constantinople; and to the times when the crusaders, sheathed from head to heel in chain mail, regarded with equal wonder and contempt the Protospathaires and other military officers of the degenerate Cæsars, as recorded by Anna Comnena, clad in the precise equipments which are still to be seen in the bas-reliefs of Trajan's column.—The oriental nations in the mean time had adopted much more complete, as well as more perfect, suits of armor, which seem to have been mostly made of overlapping scales, sewed upon leathern dresses, accurately fitting the shape, and covering the whole carcase and limbs of the horse as well as of the rider; and this, which is said to have been especially the style of the Sarmatians, was ultimately adopted by all the heavy cavalry (*cataphracts*) of the enemies, and at times the mercenary allies of Rome.—Throughout the western provinces of the Roman empire the same arms, offensive and defensive, were adopted; and even the first Anglo-Saxon conquerors of England were equipped and armed very similarly to the legionary soldiers. But when the vikings and sea-pirates of the North came down on the provinces, of late emancipated from the declining empire, and left to their own defence and their own devices, far other arms and weapons were introduced. Conical helmets of wrought steel, with curious shirts of a sort of primitive mail, not composed of intertwisted links, but of stout single rings, set edgewise, perpendicularly, in close contact, each to the next, upon shirts or jackets of elk or bison hide, to which they were strongly sewed, so as to cover the whole surface of the leather, and to offer to a blow the outer edges of a series of connected rings, formed their body armor. Round targets of wrought steel, with bosses and spikes in the centre, protected their left arms; and their offensive weapons were steel crossbows, heavy two-edged cutting swords, and ponderous glaives, bills, or battle-axes, as they were indiscriminately called, with the addition of short, heavy javelins, in the use of which they were great proficient. Such was the later armor of the Anglo-Saxons of England, and with such they fought, within a few days, victoriously against Harald Hardrada, at Stamford in Yorkshire, and at Hastings, to their utter discomfiture, against the Norman chivalry of William the Bastard. These men, of originally cognate origin, wore arms of somewhat kindred device, though modified in accordance with circumstances, and adapted to the use of cavalry, instead of footmen and searovers. They wore the same conical steel caps; but these were now fitted with what was called a nasal, being a perpendicular steel bar descending from the cap, so as to protect the nose. They had long shirts, which might almost be

called gowns, falling down to the mid leg, but parted before and behind so as to hang on each side the horse and protect the thighs, made of a linked texture, of small steel rings, intricately woven into one another, precisely after the manner of a modern curb-chain. These shirts, technically known as hauberks (Fr. *haubert*, Ital. *hobergo*) had long sleeves, reaching to the wrists; and, with them, were worn hose of the same material, with feet like those of modern stockings, reaching up to the girdle, where they were secured, so that the whole man was covered with a perfect web of flexible but impenetrable steel network. The shield was what is technically called heater-shaped, being exactly in the form of a modern smoothing iron; it was worn hung about the neck, with the broad side of the triangle upward, so as to protect the chest when the knight charged with the lance on horseback; and on the left arm, when he fought sword in hand. The weapons offensive of these formidable warriors were long steel-pointed lances, and straight two-edged, but not as yet two-handed, swords for the cavalry; long bows and short swords, or rather large knives for the infantry, who were armed in the same manner, although in a lighter fashion than the men-at-arms. As the mail, although it could not be easily cut through or pierced by lance-point or sword-edge, could be beat in, since it was perfectly pliable and resisted by yielding rather than by sustaining, and could therefore afford no defence from terrible bruises and contusions, the wearer was obliged to swathe himself in thick casings, 2 or 3 in number, of coarse woollen stuff, and to wear, above those, but still under the mail, a coat of buff leather of elk's or bull's hide, sufficient in itself to resist a sabre cut. This inconvenience, and the fact that, so soon as the vast espaldrons, or double-handed swords, with blades 4 feet in length were introduced, the mail itself was liable to be cleft asunder, as it was to be smashed to pieces by the contusing blows of mace or battle-axe, led to the introduction of plate armor. But this improvement crept in slowly and gradually. The first addition was the square-topped helmet of the Templars, covering the whole face, with a sort of door opening laterally on hinges, but not capable of being opened at the will of the wearer, like the *avantaille* and beaver of later days. Then poldrons, or plates covering the shoulders, genouilleres, or knee-pieces, of jointed steel splints, and plate shoes, were added to the mail; and this was the suit of armor, of the best and most approved construction, so late as to the time of the third crusade of Richard Cœur de Lion and Philip Augustus, A. D. 1189, both of which monarchs are represented, in their great seals, equipped and armed exactly as described. The horses, at this period, were accoutred only with chamfrons of steel protecting their foreheads, often armed with a spike, like the horn of a unicorn; and with a poutrel or breast-cloth of chain mail attached

to the bows of the saddle and falling down over the chest of the animal.—The next change was characterized by a mixture of two styles, such as we find in the armor of the time of Edward II. when the hauberk and chausses, or hose, are nearly covered with the different pieces of wrought-iron, and the shoulders and elbows have similar defences. Overlapping plates for the gauntlets, with small steel knobs or spikes, called gads, for the knuckles, appeared soon after; and by the reign of Richard II. the transformation was so far completed that only the camail—probably corrupted from cap-mail—the part which hung from the head over the neck and shoulders, the gussets at the joints, and the bottom of the apron, could be seen of the entire suit of ringed mail, worn at the beginning of the century. The splendor of the armor had also become as much a matter of attention as its construction; so that a new danger resulted to the owner of any peculiarly fine suit. Froissart records the case of Raymond, a nephew of Pope Clement, "who was taken prisoner, but afterward put to death for his beautiful armor." Ailettes or small wings were attached to the back of the shoulders in one reign, the vizored *baçinet* was enriched with wreaths or bands in another; while, in a third, that of Henry V., by which time the knight was cased in complete steel from head to foot, the graceful *parache* or plume of feathers is sometimes seen surmounting the casque, and giving a new air to the dress and to its wearer; while the crested helmet, now only worn at tournaments, grows more and more magnificent.—From this date, commencing with the reign of Henry VI., there is preserved in the tower of London an unbroken series of specimens of the armor of every reign, extending down to that of James II., with whose time the use of complete armor may be said to have completely ceased. Three of these suits, those of Henry VI., Edward IV., and Henry VII., in whose time defensive armor had reached its utmost perfection, are especially worthy of notice, as portraying the improvement and completion of the equipment of man and horse. In addition to the evident magnificence and security of the dress of Henry VI., there is one particular feature only perceptible on a close examination. The back and breast plates are composed of several pieces each, so as to make the whole flexible. It was for a long time a matter of much difficulty to understand how a knight equipped himself; till Sir Samuel Meyrick, by the aid of an old document, solved the enigma. According to him, the procedure was as follows: The sleeves and shirt of mail would be first put on; then the long-pointed *sollerets*, or overlapping pieces of steel for the defence of the feet, with the formidable spurs screwed into them; then the greaves for the legs and the cuisses for the thighs. The breastplate would be next adjusted to the body, to which the *tuilletes*, those overlapping pieces which hang from the waist over the hips, would

be fastened by their straps. The *van-braces*, or defences of the forepart of the arm, and the *rear-braces*, for the remainder of the arm up to the shoulder, would follow. The neck, head, and hands, now alone remain undefended. The camail is hung on the neck, the *salade* or *sallet*, a new German head-piece, characterized by a peculiar projection behind, over which is the rich-looking knight's cap and kingly device, is put upon the head; and the beautifully wrought gauntlets on the hands and wrists. The effigy of Henry VI. bears his pole-axe, a weapon of German origin, in his hands; and, if he had not a martial heart, he has at least in his armor, as he sits on his horse in the royal armory, a very martial exterior. In the next armor, that of Edward VI., there are considerable changes and improvements; the leg-pieces end a little above the ankles, and instead of *sollerets* appear slipper stirrups. Three entirely new pieces are added to the armor. The *grande garde*, a large piece of steel fastened over the left side of the breastplate, a sort of substitute for the shield—the *garde de bras*, a peculiarly shaped piece of armor covering the arm above the elbow, and lastly the *volant* piece, which is an extraordinary projection, acutely angular in front and advancing sharply forward, attached to the upper rim of the breastplate, and covering the whole face and helmet, up to the very brows, when the head is lowered. It was so perfect a protection, and so difficult to attain, or hit with the lance-point, that it was often disused by agreement, in tournaments. The wearer could only see over it, by throwing his head as far backward as possible, so as to bring his eyes above its upper rim. In real action, it must have been wholly useless; since the wearer must have fought in it blind and darkling, and, if safe himself, could work no evil to his antagonist. In the suit of Henry VII., the victor of Bosworth field, the perfection of armor is attained. The whole suit is fluted; the neck is defended by pass guards, rising perpendicularly from the shoulders; the helmet assumes a natural form; the back of the neck is protected by flexible plates; and the whole of the head-piece is made to adapt itself to every movement. The horse's head is still guarded by the *chamfron*, to which is added the *manifaire*, protecting the crest and arch of the neck, the *poitrel* of solid plates covering the counter, and the *oroupiet*, also of solid steel, extending over the whole rump of the animal from the castle of the saddle to the tail. These parts of the horse armor constitute what is called the *harding proper*. It is in this reign that the art of defence had so far surpassed the means of offence that it is on record, that in Italy, where the best armor, that of Milan, was made, two armies fought from 9 in the morning until 4 in the afternoon, in which battle not only no person was killed, but no one was wounded. From this date, however, the use of armor has constantly declined. In the reign of Henry VIII., the rolling musketry of the Spanish infantry, at

Pavia, annihilated the French gendarmerie; and cavalry thenceforth ceased to be the most efficient arm of battle. During the wars of the commonwealth, in England, and of the Low Countries, armor fell more and more into abeyance, as musketry and ordnance improved so rapidly that actions came to be decided at a distance, and the best and bravest of troops rarely, or never, came hand to hand. At the commencement of the present century the only troops who still wore defensive armor, were the heavy cavalry of the Austrian, Russian, and French imperial armies, who were all cuirassiers. Napoleon I. made great use of this arm, and generally decided his victories by a crushing charge of his steel-clad horse. But it is very doubtful whether the cuirass is of real utility, and whether it does not detract more from the mobility and free action of the trooper than it adds to his security, or weight in the onset. At Waterloo the iron-sheathed cuirassiers went down, like grass, before the superior weight of the men and horses of the English household troops, who wore no armor; and, in the last tremendous battles of the Crimea, although there were cuirassiers in the armies of all the 3 belligerents, no use was made of them in the field. With the present tenfold increased efficiency of small arms, by the introduction of the Minié bullet, the advantage and use of armor, even for cavalry, may probably be held to be extinguished for evermore.

ARMORICA, the name anciently given to the north-west coast of Gaul, from the Loire to the Seine. It had a considerable fleet and carried on a large intercourse with Britain. Maximus, a Roman officer, having revolted with the legions of Britain against the emperor Gratian, 883 B. C., passed into Gaul with 2 Roman legions and a number of aboriginal Britons, among whom was one Conan Mariadec, to whom Maximus gave the government of Armorica. Mariadec obtained the recognition of his independence from the emperor Theodosius, and in the 5th century thousands of British Celts came over, rather than remain under the hated Saxon yoke. They found in Armorica a hospitable reception, and a dynasty akin to them in race. The descendants of Conan Mariadec successfully repelled the Danish, Norwegian, and Irish pirates from the coasts of Armorica, and also, on the land side, the various German tribes who invaded and ravaged Gaul. During the 5th and 6th centuries it was the most peaceful and prosperous part of that country. The Christian religion was early propagated there. Bishops of Dol, Quimper, and Vannes, are recorded at the end of the 4th century, and the annals of Armorica preserve a long roll of Celtic saints whose names are not known elsewhere. In consequence of the influx of Britons about the 6th century, Armorica began to be called Bretagne.

ARMS, instruments or weapons of offence, as opposed to defensive armor. Arms may, in this sense, be separated into 2 broad divisions of

ancient and modern, reckoning the latter from the adaptation of gunpowder to purposes of war; and each of these may be again distinguished into missiles and weapons for hand to hand encounter. It stands to reason that offensive arms were prior in their invention and use to defensive coverings, since the latter could be of no utility except against the effect of the former. It is probable, also, that missiles were prior, in point of time, to weapons for close fight, inasmuch as nature furnishes every animal, more or less, with the means of attack and defence at close quarters, but gives no means for striking or capturing a distant enemy or object of pursuit, until he be first overtaken by superior speed of foot. Furthermore, in the East, to which all evidences point as the cradle of civilized man, missile weapons have always prevailed from the earliest periods of history to the present day. The bow and the javelin were, as history tells us, and as we see confirmed by the wonderful and wonderfully preserved sculptures of Nineveh, in Scriptural ages, the favorite weapons of the Parthians, Persians, Assyrians, Medes, and other Oriental races; while their instruments for close fight were merely weak, straight daggers, *acinaces*, which word has been falsely translated scymitars. In the heroic wars, as described by Homer, missiles were still, in the hands of the chiefs and heroes, at least, the principal weapons; a ponderous spear, hurled from the hand, and rarely, if ever, used to thrust with as a pike, being the instrument which decided nearly all the duels of the champions, although, at times, they had recourse to their short swords, and even to heavy stones cast from the hand. The masses, indeed, would seem to have fought in phalanx or close column with the long standing pike, held fast in both hands. The bow and sling had, evidently, as little weight in deciding the fate of battles as they had favor in the eyes of the aristocratic leaders of the day. This prejudice continued, on the part of the Greeks, nearly to the end of their polity, the bow being hardly considered a fitting weapon for a freeman, and its use being mostly attributed to slaves, mercenary or tributary allies, or to proletarians of the poorest and lowest degree. The arm of the free Greeks of the republican cities, and afterward of the Macedonian and barbaric kingdoms of upper Hellas, was emphatically the pike, or *sarissa*, of 24 feet in length, which they charged in both hands, having their persons obliquely covered by the great round shield worn upon the left arm. The tactic on which the success of this arm depended was a closely serried column, ordinarily of 12 or 24, but occasionally of 50, files in depth. So long as the phalanx held its front unbroken, its close array of spear points was impenetrable and bore down every foe whom it encountered front to front; but it was an unwieldy body, liable to be thrown into disorder by an attack on the flanks or in the rear, and, when once thrown out of its order, so that an enemy could get within the heads of the long pikes, it was

invariably and easily routed, since the weak, short swords which the men carried in addition to their pikes, were not weapons to do powerful execution, and such as they were, the Greeks had neither use nor confidence in them, their whole discipline and drilling being directed to, and dependent on, the pike. The weapons of the Romans, on the contrary, were a short, massive javelin, 6 feet in length, including the triangular steel head of 18 inches, which they were wont to hurl into the lines of their enemy at 10 or 15 paces distant, when no shield, however stout, or breastplate, however finely tempered, could resist its brunt, and a short two-edged broadsword, probably, in the first instance, of Spanish origin and manufacture. This latter instrument, with which they were trained to stab rather than to strike, as by so doing they inflicted the deadliest wounds on their enemies' persons with the least exposure of their own, was that with which Rome cut her way to universal empire. Her tactic, adapted to its use, was a loose array of open lines, each man standing 8 feet from his right and left hand comrades, so that he had a clear space of 6 feet in which to manage his sword and buckler, and fighting, as it were, a duel or single combat, hand to hand, with his immediate opponent, over whom his peculiar weapon, his singular skill in its use, and his incessant drilling to athletic exercises of all sorts, gave him immense advantage. With the Greeks and Romans infantry was the front and principal feature of their armies. In cavalry they were ever weak, and archery and slingers they contemptuously disregarded. But with the decline of the Roman empires, especially that of the East, a new arm of the service took the lead, and the steel-clad cavalry of the middle ages for many a year carried all before them; infantry, with but two exceptions, the English and the Swiss, being utterly powerless against their overwhelming charge. The arms of these feudal men-at-arms were the lance, the mace, the battle-axe, and the two-handed sword; but it is the first to which they owed their prodigious success, it being, to them, what the sarissa was to the Greek footman of the phalanx. It was a huge and ponderous weapon of nearly 18 feet in length, balanced by the great weight of its butt-end, which was often nearly a foot in diameter, at 20 inches from the extremity, having a notch cut out to admit the upper arm of the champion, which steadied it as it was laid in rest, supported by a projecting iron catch attached to the right hand side of the knight's corselet. With this prodigious weapon, protruding 10 feet beyond their horse's chest, sheathed in panoply, which defied any missiles which in that day could be brought against it, with the sole exception of the English cloth-yard arrow, and charging like a whirlwind through the ranks of their ill-armed and ill-prepared antagonists, no infantry could resist their shock. Only when their front was protected by a *cheval de frise* of steel-shod palisades, and their

flanks secured by horse, the English archers with their fatal longbows, of 6 feet in length, and their cloth-yard arrows (see ARCHERY), shot them down through plate and mail, as if they were naked men, and invariably won the field, unless, when failing to defend their front with pikes, or secure their flanks, the mail-clad cavalry broke into their lines, when the axe and mace and two-handed sword made short work of them. The other arms of the infantry of this time were the bills—something similar to a short heavy scythe-blade set erect on a shaft 4 feet long—leadennallets and long knives of the Anglo-Norman archers—the pikes and halberts of the Swiss, which won them the bloody day of Sempach, and did them yeoman service at Morat, Granson, and Nancy, when the Austrian and Burgundian chivalry had dismounted—the crossbows of the Genoese, and the serried spears of the Scottish foot, who fought like the Greeks in phalanx. From the battle of Hastings to that of Pavia, the lance was the queen of weapons; nothing could resist its levelled charge, and, until gunpowder, the grave of chivalry, was brought into the field, it rendered the aristocratic *gendarmie* invincible in the shock of battle. But at that battle, fatal to Francis, and to the flower of his kingdom's chivalry, musketry, so far improved, though the weapon was still but an imperfect matchlock arquebuse fired from a rest, as to be able to sustain a rolling fire of volleys, assumed the lead in military matters, which seems now by the most recent inventions to be secured to it forever. After Pavia, the reign of feudalism and charging chivalry was over; and, although the musket was not yet sufficiently certain in its aim, or effective in its range and penetration, but that the English longbow, yet for a while, contended with it for the palm, from that day infantry reassumed the precedence, has ever since composed the bulk of modern armies, stood the brunt of battles, fixed the scale of victory, and only called in the aid of cavalry to complete the route of disordered and discomfited antagonists, or if itself forced to retire before overwhelming forces, to cover its retreat from assailants, whose pursuit if rapid must throw them into disorder, and expose them to be charged by horse, while in confusion. It has long been known that horse, however strong or well led, cannot break steady infantry, armed even with the pike alone, when in square, and recent events have shown that with the improved fire-arms of the modern day, they can be successfully resisted in line.—For a long time the progress and improvement of fire-arms was extremely slow. The range was small, the accuracy of aim imperfect, and, till the musket was combined with the bayonet, the musketeer had no means of defence in his own person either as against charging horse, or as against infantry with long weapons, at close quarters. During this period, therefore, the pike again rose in favor, and, for a long time, pikes lined with musketry were the arms of the

choice troops of all armies in the world, and the main agents in winning all the great victories of their day. Such were the famous Spanish infantry, known, in the bloody wars of the Netherlands persecutions, as the old bands of Castile; such the Swedish blue and yellow battalions of Gustavus Adolphus, the Protestant lion of the north; such the invincible legions of Wallenstein and Tilly and their contemporaries of the 30 years' war. Meantime, the bayonet was added to the arquebuse or musket, which had become from a matchlock a firelock, and thus united in itself the properties of both pike and gun, and could be used indiscriminately as a missile or a weapon at close quarters. But, from this date, missiles have become as decidedly the arbiters of war and the winners of battles, as was the stabbing sword of the Roman legionary, or the lance of the feudal chivalry. Nine-tenths of all the battles that have been fought since the days of the English civil war, have been decided by artillery and musketry, without the crossing of a bayonet, or the stroke of a sword; unless in a casual charge of cavalry, or in the pursuit, after the tide of battle has ebbed into a tumultuous rout. And such will now be the case, more than ever. The French wars of the revolution against the Tyrolese, and the American war of independence, brought the rifle, which was by no means a new weapon as some persons have supposed—for the principle of rifling or screwing barrels, as it was then called, and its effect on the bullet, were known and used even in matchlocks, so early as the 16th century—into general notice, and the invention of percussion doubled even its utility. Recent improvements have overcome the objections to its use as a military weapon, which lay in the difficulty and slowness of loading; while such a wonderful increase of range has been obtained that musketry with the Minié bullet is now fully effective at little short of a mile's distance; and that, not only in volley firing, as against masses of men, but against single individuals, who can be picked off unerringly at 600 and 700 yards' distance. Equal facilities have been gained in the acquisition of the art and skill of taking aim; and the system of instruction has so far advanced, that it is now believed that any man of ordinary mental and physical powers may be taught to become an efficient marksmen, and that it is evident, that unless the range and practice of great guns can be equally improved and increased, small arms will decide the issue of every battle, since it has been proved not only possible but easy to silence cannon, by shooting down the artillerists at their guns, beyond the range of grape. Such is a brief review of the arms which have proved the most effective from the earliest periods of history to the present day. What further strides modern science and invention may make in this department, it is not easy to foresee, or possible to predict; but it is satisfactory to know that with every increase of the facility of killing, and improvement of

the means of destruction, war becomes less probable, and, when actually present, less bloody than in the old days of simple sword and buckler.

ARMSTRONG, a county in central Pennsylvania, having an area of 750 square miles; population, 29,560; capital, Kittanning. The surface of the country is undulating, and the soil generally fertile. It is watered by the Alleghany, and several smaller streams. Its most valuable mineral productions are iron, salt, and coal. In 1850 this county produced 197,697 bushels of wheat, 195,501 of Indian corn, 470,742 of oats, 16,047 tons of hay, and 489,108 pounds of butter. There were 21 flour and grist mills, 12 salt-boiling establishments, 5 carpentering and building establishments, 18 saw mills, 9 manufactories of brick, and 8 of tin and sheet-iron ware, 2 woollen factories, 1 nail factory, 2 iron foundries, 2 forges, 1 furnace, and 8 tanneries. It contained in that year 65 churches, and 2 newspaper establishments. There were 6,477 pupils attending public schools, and 135 attending academies or other schools. The Pennsylvania canal passes through its southern extremity. The county, which is named after Gen. Armstrong, was organized in 1800.

ARMSTRONG, JOHN, general, an American officer in the revolutionary war, the author of the celebrated anonymous "Newburg Addresses," afterward minister to France, and secretary of war in 1813, born at Carlisle, Penn., in 1758, died April 1, 1848. At the age of 18 he entered the army as a volunteer, was one of Gen. Mercer's aids at the battle of Princeton, and bore him in his arms from the field, when he had received his death wound. He afterward became a favorite of Gen. Gates, and served under him, with the rank of major, through the remainder of the war. During the winter of 1782-'83, while the army was encamped at Newburg, great anxiety was felt among the officers and men as to the probable action of congress with regard to the arrearages of pay, and the half-pay promised to those officers who should serve through the war. A committee of 3 was finally appointed to present a memorial to congress, which was received and debated, but no further action was taken. This increased the previous state of dissatisfaction, and on the 10th of March, 1783, a meeting of officers was called anonymously for the next day, to discuss their grievances. On the day appointed an anonymous address was issued, forcibly and eloquently written, in which the writer exhorted his comrades to adopt a bolder tone; to refuse to perform further military duty during the war, or to lay down their arms on the return of peace, unless their first demands were complied with. It required all the prudence, firmness, and judgment of Washington to avert the evil effects of this appeal to the troops. He immediately issued a call for a similar meeting on the 15th inst., for the discussion of their claims, which was followed by

another anonymous address, construing the action of Washington into an approval of the course previously proposed by the writer. At this meeting Washington addressed the officers with great earnestness and feeling, assuring them of his sympathy with their suffering, and his ardent desire to cooperate with them in obtaining the ends which they had in view, but begging them not to follow the dangerous advice of the writer of the addresses, nor sully the glorious reputation which they had acquired, by thus opening the flood-gates of civil discord. His eloquence was completely successful, and a resolution was passed unanimously by the officers, assuring him of their regard, and pledging themselves to reject the advice of the address. Washington wrote an urgent appeal in their behalf to congress, which was successful. Provision was made for the satisfaction of their claims, and the danger passed away. Armstrong wrote these anonymous productions at the request of many of his fellow-officers, and although Washington had spoken in terms of unmeasured reprobation of their author at the time, he afterward saw reason to change his opinion, and in a letter to General Armstrong in 1797 he assured him that he believed his object to have been just, honorable, and friendly to the country. The first civil office which Gen. Armstrong held was that of secretary of the state of Pennsylvania; he was also a member of the old congress. In Nov. 1800 he was chosen a member of the U. S. senate from the state of New York, and in 1804 was sent as minister to France, where he performed the duties of his station in a highly creditable manner, at the same time acting as Spanish minister. He returned home in 1810. At the commencement of the war of 1812 he received a brigadier-general's commission, and the command of the district which included the city of New York. In the following year he unwillingly accepted the office of secretary of war, having a low opinion of the qualifications of the generals in command. He removed the war department to Sackett's Harbor, that he might better watch the operations against Canada, but all his plans were thwarted by the generals commanding the U. S. forces. After the capture of Washington in 1814, Gen. Armstrong retired from political life. He incurred much blame for this disaster, but very unjustly, as Gen. Winder, to whom the defence of the district had been intrusted, was appointed by the president, in direct opposition to his advice. Gen. Armstrong's indignation at Mr. Madison for taking no steps to relieve him of this undeserved disgrace, ended in his resignation. A great portion of the remainder of his life was passed in literary avocations. He wrote 2 excellent treatises on farming and gardening, a severe criticism of Gen. Wilkinson's memoirs, several biographical sketches, and a history of the war of 1812. He also projected and partly prepared a history of the American revolution, for which task his intimacy with the chief actors in the struggle, and the share which

he himself had borne in it, gave him extraordinary facilities. He married a sister of the late Chancellor Livingston in 1789, and took up his residence on the North river, at Redhook, in Dutchess county.

ARMSTRONG, JOHN, a physician, poet, and miscellaneous writer, best known as the author of the "Art of Preserving Health," a didactic poem which was prodigiously admired in its day, born in Castleton parish, Roxburghshire, about 1709, died in 1779. His father was a clergyman. He studied at the university of Edinburgh, and after receiving his medical diploma, he settled in London. His practice, however, was very small. In 1735 he published anonymously, "An Essay for Abridging the Study of Physic," in which he ridiculed the ignorance of the apothecaries. In 1737 he published an outrageously indecent poem entitled the "Economy of Love." In 1744 appeared the "Art of Preserving Health," a work which, though containing some fine passages, has but little merit considered as a whole. He remained in London until 1760, when, through the influence of John Wilkes, as it is said, he was made physician to the army in Germany, and held that office until the peace of 1763. He subsequently quarreled with Wilkes. He seems to have been soured latterly by his disappointments, and his writings abound in attacks upon the medical profession. He possessed, however, the friendship of Thomson, and retained it to the last. During the closing years of his life, he lived upon his half-pay, from which he was found at his decease to have saved £3,000. His remaining published writings are a volume of "Sketches or Essays," a collection of short poems under the title of "Miscellanies," a "Short Ramble through France and Italy," and a volume of medical essays.

ARMSTRONG, JOHN, an eminent physician and author of several medical works, born May 8, 1784, at Bishop Wearmouth, in Durham, died of consumption, Dec. 12, 1829, in London. His early advantages were small, but at the age of 19 he entered on his medical studies at Edinburgh, where he took his degree in 1807, and commenced practising in his native place. He soon removed to the neighboring town of Sunderland, and in 4 years became the leading physician of the place. In 1816 he published his work on "Typhus," which had a rapid sale throughout the kingdom. In 1818 he removed to London, where he met with great success, which was the more surprising, as he failed to pass his examination before the college of physicians, a necessary preliminary to commencing practice in the city. That institution was exceedingly unpopular in the profession, however, and his rejection was ascribed to jealousy. In consequence of the prevalence of this opinion, he was soon after elected physician to the fever hospital. In 1821 he united with Mr. Grainger in founding the Webb-street school of medicine, where his lectures were exceedingly popular. His chief defect was immoderate ego-

tism, he regarding himself as a great reformer in the healing art. He ridiculed Cullen and other eminent writers in unmeasured terms. His lectures, edited by Joseph Rix, were published in 1884. As a practitioner, Dr. Armstrong well deserved the success he achieved. In private life he was most amiable. Beside the works above mentioned, he wrote several other medical treatises.

ARMSTRONG, SAMUEL T., a printer and bookseller, at one time mayor of Boston, died March 26, 1860, aged 66. He published Dr. Buchanan's researches in Asia, which had an enormous sale, and a stereotype edition of Scott's Bible, which was very successful. He accumulated a large fortune in trade. Mr. Armstrong held also the office of lieutenant-governor, and acted as governor in 1836, when Gov. Davis was sent to the U. S. senate.

ARMSTRONG, WILLIAM JOSEPH, D. D., an American clergyman, and secretary of the American board of commissioners for foreign missions, born at Mendham, New Jersey, Oct. 20, 1796, died by shipwreck, Nov. 27, 1846. He was a graduate of Princeton college and theological seminary, and began to preach as a missionary in central Virginia. He was in 1824 installed pastor of the first Presbyterian church in Richmond, where he labored with fidelity and success for 10 years. In 1834, being appointed to the secretaryship of the American board of missions, he removed to Boston, and in 1838, at the suggestion of the prudential committee of the board, he changed his residence to New York. He, however, visited Boston each month to attend the meeting of the prudential committee. In returning from one of these journeys, the boat in which he had taken passage was lost in a tempest, and many of the passengers, among whom was Dr. Armstrong, perished. His life and a collection of his sermons have been published.

ARMY, the organized body of armed men which a state maintains for purposes of offensive or defensive war. Of the armies of ancient history the first of which we know any thing positive is that of Egypt. Its grand epoch of glory coincides with the reign of Rhamses II. (Sesostris), and the paintings and inscriptions relating to his exploits on the numerous monuments of his reign, form the principal source of our knowledge on Egyptian military matters. The warrior caste of Egypt was divided into two classes, *hermotybi* and *calasiri*, the first 160,000, the other 250,000 strong, in their best times. It appears that these two classes were distinguished from each other merely by age or length of service, so that the *calasiri*, after a certain number of years, passed into the *hermotybi* or reserve. The whole army was settled in a sort of military colonies, an ample extent of land being set apart for each man as an equivalent for his services. These colonies were mostly situated in the lower part of the country, where attacks from the neighboring Asiatic states were to be anticipated; a few colonies only were establish-

ed on the upper Nile, the Ethiopians not being very formidable opponents. The strength of the army lay in its infantry, and particularly in its archers. Beside these latter there were bodies of foot soldiers, variously armed and distributed into battalions, according to their arms; spearmen, swordsmen, clubmen, slingers, &c. The infantry was supported by numerous war-chariots, each manned by 2 men, one to drive and the other to use the bow. Cavalry does not figure on the monuments. One solitary drawing of a man on horseback is considered to belong to the Roman epoch, and it appears certain that the use of the horse for riding and of cavalry became known to the Egyptians through their Asiatic neighbors only. That at a later period they had a numerous cavalry, acting, like all cavalry in ancient times, on the wings of the infantry, is certain from the unanimity of the ancient historians on this point. The defensive armor of the Egyptians consisted of shields, helmets, and breastplates, or coats-of-mail, of various materials. Their mode of attacking a fortified position shows many of the means and artifices known to the Greeks and Romans. They had the *testudo*, or battering-ram, the *vineæ*, and scaling-ladder; that they, however, also knew the use of movable towers, and that they undermined walls, as Sir G. Wilkinson maintains, is a mere supposition. From the time of Psammetichus a corps of Grecian mercenaries was maintained; they were also colonized in lower Egypt.—Assyria furnishes us with the earliest specimen of those Asiatic armies which, for above 1,000 years, struggled for the possession of the countries between the Mediterranean and the Indus. There, as in Egypt, the monuments are our principal source of information. The infantry appear armed similar to the Egyptian, though the bow seems less prominent, and the arms offensive and defensive are generally of better make and more tasteful appearance. There is, beside, more variety of armament, on account of the greater extent of the empire. Spear, bow, sword, and dagger, are the principal weapons. Assyrians in the army of Xerxes are also represented with iron-mounted clubs. The defensive armament consisted of a helmet (often very tastefully worked), a coat of mail of felt or leather, and a shield. The war-chariots still formed an important portion of the army; it had 2 occupants, and the driver had to shelter the bowman with his shield. Many of those who fight in chariots are represented in long coats-of-mail. Then there was the cavalry, which here we meet with for the first time. In the earliest sculptures the rider mounts the bare back of his horse; later on, a sort of pad is introduced, and in one sculpture a high saddle is depicted, similar to that now in use in the East. The cavalry can scarcely have been very different from that of the Persians and later eastern nations—light, irregular horse, attacking in disorderly swarms, easily repelled by a well-armed, solid infantry, but formidable to a disordered or beaten army.

Accordingly, it figured in rank behind the charioteers, who appear to have formed the aristocratic arm of the service. In infantry tactics some progress toward regular movements and formations in ranks and files appears to have been made. The bowmen either fought in advance, where they were always covered, each of them, by a shield-bearer, or they formed the rear rank, the first and second ranks, armed with spears, stooping or kneeling to enable them to shoot. In sieges they certainly knew the use of movable towers and mining; and, from a passage in Ezekiel, it would almost appear that they made some sort of mound or artificial hill to command the walls of the town—a rude beginning of the Roman *agger*. Their movable and fixed towers, too, were elevated to the height of the besieged wall, and higher, so as to command it. The ram and vinea they used also; and, numerous as their armies were, they turned off whole arms of rivers into new beds in order to gain access to a weak front of the attacked place, or to use the dry bed of the river as a road into the fortress. The Babylonians seem to have had armies similar to those of the Assyrians, but special details are wanting.—The Persian empire owed its greatness to its founders, the warlike nomads of the present Farsistan, a nation of horsemen, with whom cavalry took at once that predominant rank which it has since held in all eastern armies, up to the recent introduction of modern European drill. Darius Hystaspes established a standing army, in order to keep the conquered provinces in subjection, as well as to prevent the frequent revolts of the satraps, or civil governors. Every province thus had its garrison, under a separate commander; fortified towns, beside, were occupied by detachments. The provinces had to bear the expense of maintaining these troops. To this standing army also belonged the guards of the king, 10,000 chosen infantry (the Immortals, *Athanatoi*), resplendent with gold, followed on the march by long trains of carriages, with their harems and servants, and of camels with provisions, beside 1,000 halberdiers, 1,000 horse guards, and numerous war-chariots, some of them armed with scythes. For expeditions of magnitude this armament was considered insufficient, and a general levy from all the provinces of the empire took place. The mass of these various contingents formed a truly oriental army, composed of the most heterogeneous parts, varying among themselves in armament and mode of fighting, and accompanied by immense trains of baggage and innumerable camp-followers. It is to the presence of these latter that we must ascribe the enormous numbers of the Persian armies as estimated by the Greeks. The soldiers, according to their respective nationality, were armed with bows, javelins, spears, swords, clubs, daggers, slings, &c. The contingent of every province had its separate commander; they appear, from Herodotus, to have been divided by tens, hundreds, thousands, &c., with officers to command each

decimal subdivision. The commands of large corps or of the wings of the army were generally given to members of the royal family. Among the infantry the Persian and the other Aryan nations (Medes and Bactrians) formed the *élite*. They were armed with bows, spears of moderate size, and a short sword; the head was protected by a sort of turban, the body by a coat covered with iron scales; the shield was mostly of wicker-work. Yet this *élite*, as well as the rest of the Persian infantry, was miserably beaten whenever it was opposed to even the smallest bodies of Greeks, and its unwieldy and disorderly crowds appear quite incapable of any but passive resistance against the incipient phalanx of Sparta and Athens; witness Marathon, Plataea, Mycale, and Thermopylae. The war-chariots, which in the Persian army appear for the last time in history, might be useful on quite level ground against such a motley crowd as the Persian infantry themselves were, but against a solid mass of pikemen, such as the Greeks formed, or against light troops taking advantage of inequalities of ground, they were worse than useless. The least obstacle stopped them. In battle the horses got frightened, and, no longer under command, ran down their own infantry. As to the cavalry, the earlier periods of the empire give us little proof of its excellence. There were 10,000 horse on the plain of Marathon—a good cavalry country—yet they could not break the Athenian ranks. In later times it distinguished itself at the Granicus, where, formed in one line, it fell on the heads of the Macedonian columns as they emerged from the fords of the river, and upset them before they could deploy. It thus successfully opposed Alexander's advanced guard, under Ptolemy, for a long while, until the main body arrived and the light troops manoeuvred on its flanks, when, having no second line or reserve, it had to retire. But at this period the Persian army had been strengthened by the infusion of a Greek element, imported by the Greek mercenaries, who, soon after Xerxes, were taken into pay by the king; and the cavalry tactics displayed by Memnon on the Granicus are so thoroughly un-Asiatic that we may, in the absence of positive information, at once ascribe them to Greek influence.—The armies of Greece are the first of the detailed organization of which we have ample and certain information. With them the history of tactics, especially infantry tactics, may be said to begin. Without stopping to give an account of the warlike system of the heroic age of Greece, as described in Homer, when cavalry was unknown, when the nobility and chiefs fought in war-chariots, or descended from them for a duel with an equally prominent enemy, and when the infantry appears to have been little better than that of the Asiatics, we at once pass to the military force of Athens in the time of her greatness. In Athens every free born man was liable to military service. The holders of certain public offices alone, and, in the earlier times, the fourth or poorest class of freemen,

were exempt. It was a militia system based upon slavery. Every youth on attaining his 18th year was obliged to do duty for 2 years, especially in watching the frontiers. During this time his military education was completed; afterward he remained liable to service up to his 60th year. In case of war the assembled citizens fixed the number of men to be called out; in extreme cases only the *lektes en masse* (*panstratia*) were resorted to. The *strategi*, 10 of whom were annually elected by the people, had to levy these troops and to organize them, so that the men of each tribe, or *phyle*, formed a body under a separate *phylarch*. These officers, as well as the *tactarchs*, or captains of companies, were equally elected by the people. The whole of this levy formed the heavy infantry (*hoplites*) destined for the phalanx or deep line formation of spearmen, which originally formed the whole of the armed force, and subsequently, after the addition of light troops and cavalry, remained its mainstay—the corps which decided the battle. The phalanx was formed in various degrees of depth; we find mentioned phalanxes of 8, 12, 25 deep. The armature of the hoplite consisted of a breastplate or corselet, helmet, oval target, spear, and short sword. The *forte* of the Athenian phalanx was attack; its charge was renowned for its furious impetus, especially after Miltiades, at Marathon, had introduced the quickening of the pace during the charge, so that they came down on the enemy with a run. On the defensive, the more solid and closer phalanx of Sparta was its superior. While at Marathon the whole force of the Athenians consisted of a heavy armed phalanx of 10,000 hoplites, at Plataea they had, beside 8,000 hoplites, an equal number of light infantry. The tremendous pressure of the Persian invasions necessitated an extension of the liability to service; the poorest class, that of the *thetes*, was enrolled. They were formed into light troops (*gymneta, ptili*); they had no defensive armor at all, or a target only, and were supplied with a spear and javelins. With the extension of the Athenian power, their light troops were reinforced by the contingents of their allies, and even by mercenary troops. Acarnanians, Ætolians, and Oretans, celebrated as archers and slingers, were added. An intermediate class of troops, between them and the hoplites, was formed, the *peltasta*, armed similar to the light infantry, but capable of occupying and maintaining a position. They were, however, of but little importance until after the Peloponnesian war, when Iphicrates reorganized them. The light troops of the Athenians enjoyed a high reputation for intelligence and quickness both in resolution and in execution. On several occasions, probably in difficult ground, they even successfully opposed the Spartan phalanx. The Athenian cavalry was introduced at a time when the republic was already rich and powerful. The mountainous ground of Attica was unfavorable to this arm, but the neighborhood of Thessaly and Boetia,

countries rich in horses, and consequently the first to form cavalry, soon caused its introduction in the other states of Greece. The Athenian cavalry, first 800, then 600, and even 1,000 strong, was composed of the richest citizens, and formed a standing corps even in time of peace. They were a very effective body, extremely watchful, intelligent, and enterprising. Their position in battle, as well as that of the light troops, was generally on the wings of the phalanx. In later times, the Athenians also maintained a corps of 200 mercenary mounted archers (*hippotoxotes*). The Athenian soldier, up to the time of Pericles, received no pay. Afterward 2 oboli (beside 2 more for provisions, which the soldier had to find) were given, and sometimes even the hoplite received as much as 2 drachms. Officers received double pay, cavalry soldiers three-fold, generals four-fold. The corps of heavy cavalry alone cost 40 talents (\$40,000) per annum in time of peace, during war considerably more. The order of battle and mode of fighting were extremely simple; the phalanx formed the centre, the men locking their spears, and covering the whole front with their row of shields. They attacked the hostile phalanx in a parallel front. When the first onset was not sufficient to break the enemy's order, the struggle hand to hand with the sword decided the battle. In the mean time the light troops and cavalry either attacked the corresponding troops of the enemy, or attempted to operate on the flank and rear of the phalanx, and to take advantage of any disorder manifesting itself in it. In case of a victory they undertook the pursuit, in case of defeat they covered the retreat as much as possible. They were also used for reconnoitring expeditions and forays, they harassed the enemy on the march, especially when he had to pass a defile, and they tried to capture his convoys and stragglers. Thus the order of battle was extremely simple; the phalanx always operated as a whole; its subdivisions into smaller bodies had no technical significance; their commanders had no other task than to see that the order of the phalanx was not broken, or at least quickly restored. What the strength of Athenian armies was during the Persian wars, we have shown above by a few examples. At the beginning of the Peloponnesian war, the force mustered 18,000 hoplites for field service, 61,000 (the youngest and the oldest soldiers) for garrison duty, 1,200 horsemen, and 1,600 archers. According to Boeckh's calculations the force sent against Syracuse numbered 38,560 men; reinforcements despatched afterward, 26,000 men; in all nearly 65,000 men. After the complete ruin of this expedition, indeed, Athens was as much exhausted as France after the Russian campaign of 1812.—Sparta was the military state, *par excellence*, of Greece. If the general gymnastic education of the Athenians developed the agility as much as the strength of the body, the Spartans directed their attention mostly to strength, endurance, and hardiness. They

valued steadiness in the ranks, and military point of honor, more than intelligence. The Athenian was educated as if he was to fight among light troops, yet in war he was fitted into his fixed place in the heavy phalanx; the Spartan, on the contrary, was brought up for service in the phalanx, and nothing else. It is evident that as long as the phalanx decided the battle, the Spartan, in the long run, had the best of it. In Sparta, every freeman was enrolled in the army lists from his 20th to his 60th year. The *ephors* determined the number to be called out, which was generally chosen among the middle-aged men, from 30 to 40. As in Athens, the men belonging to the same tribe or locality were enrolled in the same body of troops. The organization of the army was based upon the confraternities (*enomotiai*) introduced by Lycurgus, 2 of which formed a *pentecostys*; 2 of these were united into a *lochos*, and 8 or 4 *lochi* into a *mora*. This was the organization in Xenophon's time; in former periods it appears to have varied. The strength of a *mora* is variously stated at from 400 to 900 men, and their number at one time was said to be 600. These various bodies of free Spartans formed the phalanx; the *hoplitai* forming it were armed with a spear, a short sword, and a shield fastened round the neck. Later on, Cleomenes introduced the large Carian shield, fastened by a string on the left arm, and leaving both hands of the soldier free. The Spartans considered it disgraceful for their men to return, after a defeat, without their shields; the preservation of the shield proved the retreat to have been made in good order and a compact phalanx, while single fugitives, running for their lives, of course had to throw away the clumsy shield. The Spartan phalanx was generally 8 deep, but sometimes the depth was doubled by placing one wing behind the other. The men appear to have marched in step; some elementary evolutions were also in use, such as changing front to the rear by the half-turn of each man, advancing or retiring a wing by wheeling, &c., but they would seem to have been introduced at a later period only. In their best times, the Spartan phalanx, like that of Athens, knew the parallel front attack only. The ranks, on the march, were distant from each other 6 feet, in the charge 8 feet, and in a position receiving the charge, only $1\frac{1}{2}$ foot, from rank to rank. The army was commanded by one of the kings, who, with his suite (*damosia*), occupied a position in the centre of the phalanx. Afterward, the number of the free Spartans having considerably decreased, the strength of the phalanx was kept up by a selection from the subjected *Perioeci*. The cavalry was never stronger than about 600 men, divided into troops (*ulami*) of 50 men. It merely covered the wings. There was, beside, a body of 300 mounted men, the *elites* of the Spartan youth, but they dismounted in battle, and formed a sort of body-guard of *hoplitai* around the king. Of light troops,

there were the *skiritai*, inhabitants of the mountains near Arcadia, who generally covered the left wing; the *hoplitai* of the phalanx, beside, had *Helot* servants, who were expected in battle to do duty as skirmishers; thus, the 5,000 *hoplitai* at Platæa brought 35,000 *Helot* light troops with them, but of the exploits of these latter we find nothing stated in history.—The simple tactics of the Greeks underwent considerable changes after the Peloponnesian war. At the battle of Leuctra, Epaminondas had to oppose, with a small force of Thebans, the far more numerous, and hitherto invincible Spartan phalanx. The plain, parallel front attack, here, would have been equivalent to certain defeat, both wings being outflanked by the longer front of the enemy. Epaminondas, instead of advancing in line, formed his army into a deep column, and advanced against one wing of the Spartan phalanx, where the king had taken his station. He succeeded in breaking through the Spartan line at this, the decisive point; he then wheeled his troops round, and moving on either hand, he himself outflanked the broken line, which could not form a new front without losing its tactical order. At the battle of Mantinea, the Spartans formed their phalanx with a greater depth, but, nevertheless, the Theban column again broke through it. Agesilaus in Sparta, Timotheus, Iphicrates, Chabrias in Athens, also introduced changes in infantry tactics. Iphicrates improved the *pelastai*, a sort of light infantry, capable, however, in case of need, to fight in line. They were armed with a small round target, strong linen corselet, and long spear of wood. Chabrias made the first ranks of the phalanx, when on the defensive, kneel down to receive the enemy's charge. Full squares, and other columns, &c., were introduced, and accordingly deployments formed part of the elementary tactics. At the same time, greater attention was paid to light infantry of all kinds; several species of arms were borrowed from the barbarous and semi-barbarous neighbors of the Greeks, such as archers, mounted and on foot, slingers, &c. The majority of the soldiers of this period consisted of mercenaries. The wealthy citizens, instead of doing duty themselves, found it more convenient to pay for a substitute. The character of the phalanx, as the preëminently national portion of the army, in which the free citizens of the state only were admitted, thus suffered from this admixture of mercenaries, who had no right of citizenship. Toward the approach of the Macedonian epoch, Greece and her colonies were as much a mart for soldiers of fortune, and mercenaries, as Switzerland in the 18th and 19th centuries. The Egyptian kings had at an early time formed a corps of Greek troops. Afterward, the Persian king gave his army some steadiness by the admission of a body of Greek mercenaries. The chiefs of these bodies were regular condottieri, as much as those of Italy in the 16th century. During this period, war-like engines for throwing stones, darts, and

incendiary projectiles, were introduced, especially by the Athenians. Pericles already used some similar machines at the siege of Samos. Sieges were carried on by forming a line of contravallation, with ditch, or parapet, round the place, investing it, and by the attempt to place the war-engines in a commanding position near the walls. Mining was regularly made use of, to bring the walls down. At the assault, the column formed the *synaspismos*, the outer ranks holding their shields before them, and the inner ranks holding them over their heads, so as to form a roof (called by the Romans, *testudo*), against the projectiles of the enemy.—While Greek skill was thus mainly directed toward shaping the flexible material of the mercenary bands into all sorts of novel and artificial formations, and in adopting or inventing new species of light troops, to the detriment of the ancient Doric heavy phalanx, which at that time alone could decide battles, a monarchy grew up, which, adopting all real improvements, formed a body of heavy infantry of such colossal dimensions, that no army with which it came in contact could resist its shock. Philip of Macedon formed a standing army of about 80,000 infantry, and 8,000 cavalry. The main body of the army was an immense phalanx of some 16,000 or 18,000 men, formed upon the principle of the Spartan phalanx, but improved in armament. The small Grecian shield was replaced by the large oblong Carian buckler, and the moderately sized spear by the Macedonian pike (*sarissa*) of 24 feet in length. The depth of this phalanx varied, under Philip, from 8, to 10, 12, 24 men. With the tremendous length of the pikes, each of the 6 front ranks could, on levelling them, make the points project in front of the first rank. The regular advance of such a long front of from 1,000 to 2,000 men, presupposes a great perfection of elementary drill, which in consequence was continually practised. Alexander completed this organization. His phalanx was, normally, 16,384 men strong, or 1,024 in front by 16 deep. The file of 16 (*lochos*) was conducted by a lochagos, who stood in the front rank. Two files formed a dilochy, 2 of which made a tetrarchy, 2 of which a taxiarchy, 2 of which a xenagoy or syntagma, 16 men in front by 16 deep. This was the evolutionary unity, the march being made in columns of xenagies, 16 in front. Sixteen xenagies (equal to 8 pentecosiarchies, or 4 chiliarchies, or 2 telarchies) formed a small phalanx, 2 of which a diphalangarchy, and 4 a tetraphalangarchy or phalanx properly so called. Every one of these subdivisions had its corresponding officer. The diphalangarchy of the right wing was called head, that of the left wing, tail, or rear. Whenever extraordinary solidity was required, the left wing took station behind the right, forming 512 men in front by 82 in depth. On the other hand, by deploying the 8 rear ranks on the left of the front ranks, the extent of front could be doubled, and the depth reduced to 8.

The distances of ranks and files were similar to those of the Spartans, but the close order was so compact that the single soldier in the middle of the phalanx could not turn. Intervals between the subdivisions of the phalanx were not allowed in battle; the whole formed one continuous line, charging *on muraille*. The phalanx was formed by Macedonian volunteers exclusively; though, after the conquest of Greece, Greeks also could enter it. The soldiers were all heavy armed hoplitæ. Beside shield and pike, they carried a helmet and sword, although the hand-to-hand fight with the latter weapon cannot very often have been required after the charge of that forest of pikes. When the phalanx had to meet the Roman legion, the case indeed was different. The whole phalangite system, from the earliest Doric times down to the breaking up of the Macedonian empire, suffered from one great inconvenience; it wanted flexibility. Unless on a level and open plain, these long, deep lines, could not move with order and regularity. Every obstacle in front forced it to form column, in which shape it was not prepared to act. Moreover, it had no second line or reserve. As soon, therefore, as it was met by an army, formed in smaller bodies and adapted to turn obstacles of ground without breaking line, and disposed in several lines seconding each other, the phalanx could not help going into broken ground, where its new opponent completely cut it up. But to such opponents as Alexander had at Arbela, his 2 large phalanxes must have appeared invincible. Beside this heavy infantry of the line, Alexander had a guard of 6,000 hyaspistæ, still more heavily armed, with even larger bucklers and longer pikes. His light infantry consisted of argyraspides, with small silver-plated shields, and of numerous peltastæ, both of which troops were organized in demi-phalanxes of normally 8,192 men, being able to fight either in extended order or in line, like the hoplitæ; and their phalanx often had the same success. The Macedonian cavalry was composed of young Macedonian and Thessalian noblemen, with the addition, subsequently, of a body of horsemen from Greece proper. They were divided into squadrons (*ila*), of which the Macedonian nobility alone formed 8. They belonged to what we should call heavy cavalry; they wore a helmet, cuirass with cuissarts of iron scales to protect the leg, and were armed with a long sword and pike. The horse, too, wore a frontlet of iron. This class of cavalry, the cataphracts, received great attention both from Philip and Alexander; the latter used it for his decisive manœuvre at Arbela, when he first beat and pursued one wing of the Persians, and then, passing behind their centre, fell upon the rear of the other wing. They charged in various formations: in line, in common rectangular column, in rhomboid or wedge-shaped column. The light cavalry had no defensive armor; it carried javelins and light short lances; there was also a corps of acrobolistæ,

or mounted archers. These troops served for outpost duty, patrols, reconnoitring, and irregular warfare generally. They were the contingents of Thracian and Illyrian tribes, which, beside, furnished some few thousands of irregular infantry. A new arm, invented by Alexander, claims our attention from the circumstance that it has been imitated in modern times, the *dimachæ*, mounted troops, expected to fight either as cavalry or as infantry. The dragoons of the 16th and following centuries are a complete counterpart to these, as we shall see hereafter. We have, however, no information as to whether these hybrid troops of antiquity were more successful in their double task than the modern dragoons. Thus was composed the army with which Alexander conquered the country between the Mediterranean, the Oxus, and the Sutledj. As to its strength, at Arbela, it consisted of 2 large phalanxes of hoplitæ (say 30,000 men), 2 semi-phalanxes of peltastæ (16,000), 4,000 cavalry, and 6,000 irregular troops, in all about 56,000 men. At the Granicus, his force of all arms was 35,000 men, of whom 5,000 were cavalry.—Of the Carthaginian army we know no details; even the strength of the force with which Hannibal passed the Alps, is disputed. The armies of the successors of Alexander show no improvements on his formations; the introduction of elephants was but of short duration; when terrified by fire, these animals were more formidable to their own troops than to the enemy. The later Greek armies (under the Achaean league) were formed partly on the Macedonian, partly on the Roman system.—The Roman army presents us with the most perfect system of infantry tactics invented during the time when the use of gunpowder was unknown. It maintains the predominance of heavy infantry and compact bodies, but adds to it mobility of the separate smaller bodies, the possibility of fighting in broken ground, the disposition of several lines one behind the other, partly as supports and reliefs, partly as a powerful reserve, and finally a system of training the single soldier which was even more to the purpose than that of Sparta. The Romans, accordingly, overthrew every armament opposed to them, the Macedonian phalanx as well as the Numidian horse.—In Rome every citizen, from his 17th to his 45th or 50th year, was liable to serve, unless he belonged to the lowest class, or had served in 20 campaigns on foot, or 10 campaigns as a horseman. Generally the younger men only were selected. The drill of the soldier was very severe, and calculated to develop his bodily powers in every imaginable way. Running, jumping, vaulting, climbing, wrestling, swimming, first naked, then in full armament, were largely practised, beside the regular drill in the use of the arms and the various movements. Long marches in heavy marching order, every soldier carrying from 40 to 60 lbs., were kept up at the rate of 4 miles an hour. The use of the intrenching tools, and the throw-

ing up of intrenched camps in a short time, also formed part of the military education; and not only the recruits, but even the legions of veterans, had to undergo all these exercises in order to keep their bodies fresh and supple, and to remain inured to fatigue and want. Such soldiers were, indeed, fit to conquer the world.—In the best times of the republic there were generally 2 consular armies, each consisting of 2 legions and the contingents of the allies (in infantry of equal strength, cavalry double the strength of the Romans). The levy of the troops was made in a general assembly of the citizens on the capitol or Campus Martius; an equal number of men was taken from every tribe, which was again equally subdivided among the 4 legions, until the number was completed. Very often citizens, freed from service by age or their numerous campaigns, entered again as volunteers. The recruits were then sworn in and dismissed until required. When called in, the youngest and poorest were taken for the velites, the next in age and means for the hastati and principes, the oldest and wealthiest for the triarii. Every legion counted 1,200 velites, 1,200 hastati, 1,200 principes, 600 triarii, and 800 horsemen (knights), in all 4,500. The hastati, principes, and triarii, were each divided into 10 manipuli or companies, and an equal number of velites attached to each. The velites (*vorarii, accensi, ferentarii*) formed the light infantry of the legion, and stood on its wings along with the cavalry. The hastati formed the 1st, the principes the 2d line; they were originally armed with spears. The triarii formed the reserve, and were armed with the pilum, a short but extremely heavy and dangerous spear, which they threw into the front ranks of the enemy immediately before engaging him sword in hand. Every manipulus was commanded by a centurion, having a 2d centurion for his lieutenant. The centurions ranked through the whole of the legion, from the 2d centurion of the last or 10th manipulus of the hastati to the 1st centurion of the 1st manipulus of the triarii (*primus pilus*), who, in the absence of a superior officer, even took the command of the whole legion. Commonly, the *primus pilus* commanded all the triarii, the same as the *primus princeps* (1st centurion of 1st manipulus of principes), all the principes and the *primus hastatus*, and all the hastati of the legion. The legion was commanded in the earlier times in turns by its 6 military tribunes; each of them held the command for 2 months. After the 1st civil war, legates were placed as standing chiefs at the head of every legion; the tribunes now were mostly officers intrusted with the staff or administrative business. The difference of armament of the 3 lines had disappeared before the time of Marius. The pilum had been given to all 3 lines of the legion; it now was the national arm of the Romans. The qualitative distinction between the 3 lines, as far as it was based upon age and length of service, soon disappeared too. In the battle of Metellus against

Jugurtha, there appeared, according to Sallust, for the last time *hastati*, *principes*, *triarii*. Marius now formed out of the 80 manipuli of the legion 10 cohorts, and disposed them in 2 lines of 5 cohorts each. At the same time, the normal strength of the cohort was raised to 600 men; the 1st cohort, under the *primus pilus*, carried the legionary eagle. The cavalry remained formed in *turme* of 80 rank and file and 8 *decurions*, the 1st of whom commanded the *turma*. The armature of the Roman infantry consisted of a shield of demi-cylindric shape, 4 feet by $2\frac{1}{2}$, made of wood, covered with leather and strengthened with iron fastenings; in the middle it had a boss (*umbo*) to parry off spear-thrusts. The helmet was of brass, generally with a prolongation behind to protect the neck, and fastened on with leather bands covered with brass scales. The breastplate, about a foot square, was fastened on a leather corselet with scaled straps passing over the shoulder; for the *centurions*, it consisted of a coat of mail covered with brass scales. The right leg, exposed when advanced for the sword-thrust, was protected by a brass plate. Beside the short sword, which was used for thrusting more than for cutting, the soldiers carried the *pilum*, a heavy spear $4\frac{1}{2}$ feet wood, with a projecting iron point of $1\frac{1}{2}$ foot, or nearly 6 feet in all long, but $2\frac{1}{2}$ inches square in the wood, and weighing about 10 or 11 lbs. When thrown at 10 or 15 paces distance, it often penetrated shields and breastplates, and almost every time threw down its man. The *velites*, lightly equipped, carried light short javelins. In the later periods of the republic, when barbaric auxiliaries undertook the light service, this class of troops disappears entirely. The cavalry were provided with defensive armor similar to that of the infantry, a lance and a longer sword. But the Roman national cavalry was not very good, and preferred to fight dismounted. In later periods it was entirely done away with, and Numidian, Spanish, Gallic, and German horsemen, supplanted it. The tactical disposition of the troops admitted of great mobility. The manipuli were formed with intervals equal to their extent of front; the depth varied from 5 or 6 to 10 men. The manipuli of the 2d line were placed behind the intervals of the 1st; the *triarii* still further to the rear, but in one unbroken line. According to circumstances, the manipuli of each line could close up or form line without intervals, or those of the 2d line could march up to fill the intervals of the 1st; or else, where greater depth was required, the manipuli of the *principes* closed up each in rear of the corresponding manipulus of the *hastati*, doubling its depth. When opposed to the elephants of Pyrrhus, the 3 lines all formed with intervals, each manipulus covering the one in its front, so as to leave room for the animals to pass straight through the order of battle. In this formation the clumsiness of the phalanx was in every way successfully overcome. The legion could move

and manœuvre, without breaking its order of battle, in ground where the phalanx durst not venture without the utmost risk. One or two manipuli at most would have to shorten their front to defile past an obstacle; in a few moments, the front was restored. The legion could cover the whole of its front by light troops, as they could retire, on the advance of the line, through the intervals. But the principal advantage was the disposition in a plurality of lines, brought into action successively, according to the requirements of the moment. With the phalanx, one shock had to decide. No fresh troops were in reserve to take up the fight in case of a reverse—in fact that case was never provided for. The legion could engage the enemy with its light troops and cavalry on the whole of his front—could oppose to the advance of his phalanx its first line of *hastati*, which was not so easily beaten, as at least 6 of the 10 manipuli had first to be broken singly—could wear out the strength of the enemy by the advance of the *hastati*, and finally decide the victory by the *triarii*. Thus the troops and the progress of the battle remained in the hand of the general, while the phalanx, once engaged, was irretrievably engaged with all its strength, and had to see the battle out. If the Roman general desired to break off the combat, the legionary organization permitted him to take up a position with his reserves, while the troops engaged before retired through the intervals, and took up a position in their turn. Under all circumstances, there was always a portion of the troops in good order, for even if the *triarii* were repulsed, the 2 first lines had re-formed behind them. When the legions of Flaminius met Philip's phalanx in the plains of Thessaly, their first attack was at once repulsed; but charge following charge, the Macedonians got tired and lost part of their compactness of formation; and wherever a sign of disorder manifested itself, there was a Roman manipulus to attempt an inroad into the clumsy mass. At last, 20 manipuli attacking the flanks and rear of the phalanx, tactical continuity could no longer be maintained; the deep line dissolved into a swarm of fugitives, and the battle was lost. Against cavalry, the legion formed the *orbis*, a sort of square with baggage in the centre. On the march, when an attack was to be apprehended, it formed the *legio quadrata*, a sort of lengthened column with a wide front, baggage in the centre. This was of course possible in the open plain, only where the line of march could go across the country. In Cæsar's time the legions were mostly recruited by voluntary enlistment in Italy. Since the Social war, the right of citizenship, and with it liability for service, was extended to all Italy, and consequently there were far more men available than required. The pay was about equal to the earnings of a laborer; recruits, therefore, were plentiful, even without having recourse to the conscription. In exceptional cases only were legions recruited

in the provinces; thus Cæsar had his fifth legion recruited in Roman Gallia, but afterward it received the Roman naturalization *en masse*. The legions were far from having the nominal strength of 4,500 men; those of Cæsar were seldom much above 3,000. Levies of recruits were formed into new legions (*legiones tironum*), rather than mixed with the veterans in the old legions; these new legions were at first excluded from battles in the open field, and principally used for guarding the camp. The legion was divided into 10 cohorts of 8 manipuli each. The names of *hastati*, *principes*, *triarii*, were maintained as far as necessary to denote the rank of officers according to the system indicated above; as to the soldiers, these names had lost all significance. The 6 centurions of the first cohort of each legion were, by right, present at councils of war. The centurions rose from the ranks, and seldom attained higher command; the school for superior officers was in the personal staff of the general, consisting of young men of education, who soon advanced to the rank of *tribuni militum*, and later on to that of *legati*. The armament of the soldier remained the same: pilum and sword. Beside his accoutrements, the soldier carried his personal baggage, weighing from 35 to 60 pounds. The contrivance for carrying it was so clumsy that the baggage had first to be deposited before the soldier was ready for battle. The camp-utensils of the army were carried on the back of horses and mules, of which a legion required about 500. Every legion had its eagle, and every cohort its colors. For light infantry, Cæsar drew from his legions a certain number of men (*antesignani*), men equally fit for light service and for close fight in line. Beside these, he had his provincial auxiliaries, Cretan archers, Balearic slingers, Gallic and Numidian contingents, and German mercenaries. His cavalry consisted partly of Gallic, partly of German troops. The Roman velites and cavalry had disappeared some time ago.—The staff of the army consisted of the *legati*, appointed by the senate, the lieutenants of the general, whom he employed to command detached corps, or portions of the order of battle. Cæsar, for the first time, gave to every legion a legate as standing commander. If there were not *legati* enough, the *quæstor*, too, had to take the command of a legion. He was properly the paymaster of the army, and chief of the commissariat, and was assisted in this office by numerous clerks and orderlies. Attached to the staff were the *tribuni militum*, and the young volunteers above mentioned (*contubernales*, *comites pratorii*), doing duty as adjutants, orderly officers; but in battle they fought in line, the same as private soldiers, in the ranks of the *cohors pratoria*, consisting of the lictors, clerks, servants, guides (*speculatores*), and orderlies (*apparitores*) of the head-quarters. The general, beside, had a sort of personal guard, consisting of veterans, who voluntarily had reenlisted on the call of their former chief. This troop, mounted on the march, but fighting

on foot, was considered the *élite* of the army; it carried and guarded the *vexillum*, the signal-banner for the whole army. In battle, Cæsar generally fought in 3 lines, 4 cohorts per legion in the first, and 3 in the second and third lines each; the cohorts of the second line dressed on the intervals of the first. The second line had to relieve the first; the third line formed a general reserve for decisive manœuvres against the front or flank of the enemy, or for parrying his decisive thrusts. Wherever the enemy so far outflanked the line that its prolongation became necessary, the army was disposed in two lines only. One single line (*acies simplex*) was made use of in an extreme case of need only, and then without intervals between the cohorts; in the defence of a camp, however, it was the rule, as the line was still 8 to 10 deep, and could form a reserve from the men who had no room on the parapet. Augustus completed the work of making the Roman troops a regular standing army. He had 25 legions distributed all over the empire, of which 8 were on the Rhine (considered the main strength, *præcipuum robur*, of the army), 3 in Spain, 2 in Africa, 2 in Egypt, 4 in Syria and Asia Minor, 6 in the Danubian countries. Italy was garrisoned by chosen troops recruited exclusively in that country, and forming the imperial guard; this consisted of 12, later on, of 14 cohorts; beside these the city of Rome had 7 cohorts of municipal guards (*vigiles*), formed, originally, from emancipated slaves. Beside this regular army, the provinces had to furnish, as formerly, their light auxiliary troops, now mostly reduced to a sort of militia for garrison and police duty. On menaced frontiers, however, not only these auxiliary troops, but foreign mercenaries, too, were employed in active service. The number of legions increased under Trajan to 30, under Septimius Severus to 38. The legions, beside their numbers, had names, taken from their stations (*L. Germanica*, *L. Italica*), from emperors (*L. Augusta*), from gods (*L. Primigenia*, *L. Apollinaria*), or conferred as honorary distinctions (*L. fidelis*, *L. pia*, *L. invicta*). The organization of the legion underwent some changes. The commander was now called *præfectus*. The first cohort was doubled in strength (*cohors milliaria*), and the normal strength of the legion raised to 6,100 infantry and 726 cavalry; this was to be the minimum, and in case of need one or more *cohortes milliariae* were to be added. The *cohors milliaria* was commanded by a military tribune, the others by tribunes or *præpositi*; the rank of *centurio* was thus confined to subalterns. The admission of liberated, or non-liberated slaves, natives of the provinces, and all sorts of people into the legions, became the rule; Roman citizenship being required for the *prætorians* in Italy only, and even there this was abandoned in later times. The Roman nationality of the army was thus very soon drowned in the influx of barbaric and semi-barbaric, Romanized and non-Romanized elements; the officers alone maintained the Roman character.

This deterioration of the elements composing the army very soon reacted upon its armament and tactics. The heavy breastplate and pilum were thrown overboard; the tollsome system of drill, which had formed the conquerors of the world, was neglected; camp-followers and luxuries became necessary to the army, and the *impedimenta* (train of baggage) increased as strength and endurance decreased. As had been the case in Greece, the decline was marked by neglect of the heavy line-infantry, by a foolish fancy for all sorts of light armament, and by the adoption of barbaric equipments and tactics. Thus we find innumerable classifications of light troops (*auxiliatores, aviculatores, jaculatores, excursatores, praecursatores, scutati, funditores, balistarii, tragularii*), armed with all sorts of projectiles, and we are told by Vegetius that the cavalry had been improved in imitation of the Goths, Alani, and Huns. Finally, all distinction of equipment and armament between Romans and barbarians ceased, and the Germans, physically and morally superior, marched over the bodies of the un-Romanized legions.—The conquest of the Occident by the Germans thus was opposed by but a small remnant, a dim tradition of the ancient Roman tactics; but even this small remnant was now destroyed. The whole of the middle ages is as barren a period for the development of tactics as for that of any other science. The feudal system, though in its very origin a military organization, was essentially opposed to discipline. Rebellions and secessions of large vassals, with their contingents, were of regular occurrence. The distribution of orders to the chiefs turned generally into a tumultuous council of war, which rendered all extensive operations impossible. Wars, therefore, were seldom directed on decisive points; struggles for the possession of a single locality filled up entire campaigns. The only operations of magnitude occurring in all this period (passing over the confused times from the 6th to the 12th century), are the expeditions of the German emperors against Italy, and the crusades, the one as resultless as the other.—The infantry of the middle ages, composed of the feudal retainers and part of the peasantry, was chiefly composed of pikemen, and mostly contemptible. It was great sport for the knights, covered as they were with iron all over, to ride singly into this unprotected rabble, and lay about them with a will. A portion of the infantry was armed, on the continent of Europe, with the crossbow, while in England the longbow became the national weapon of the peasantry. This longbow was a very formidable weapon, and secured the superiority of the English over the French at Ocrey, Poitiers, and Agincourt. Easily protected against rain, which rendered the crossbow unserviceable at times, it projected its arrow to distances above 200 yards, or not much less than the effective range of the old smooth-bored musket. The arrow penetrated a one-inch board, and would even

pass through breastplates. Thus it long maintained its place even against the first small fire-arms, especially as six arrows could be shot off while the musket of that epoch could be loaded and fired once; and even as late as the end of the 16th century Queen Elizabeth attempted to reintroduce the national longbow as a weapon of war. It was especially effective against cavalry; the arrows, even if the armor of the men-at-arms was proof against them, wounded or killed the horses, and the unhorsed knights were thereby disabled, and generally made prisoners. The archers acted either in skirmishing order or in line. Cavalry was the decisive arm of the middle ages. The knights in full armor formed the first effective body of heavy cavalry, charging in regular formation, which we meet with in history; for Alexander's cataphracti, though they decided the day at Arbela, were so much an exception that we hear nothing more of them after that day, and during the whole sequel of ancient history, infantry maintains its preëminent rank in battle. The only progress, then, which the middle ages have bequeathed to us, is the creation of a cavalry, from which our modern mounted service descends in a direct line. And yet, what a clumsy thing this cavalry was, is proved by the one fact, that during the whole middle ages the cavalry was the heavy, slow-moving arm, while all light service and quick movements were executed by infantry. The knights, however, did not always fight in close order. They preferred fighting duels with single opponents, or spurring their horses into the midst of the hostile infantry; thus the mode of fighting out a battle was carried back to the Homeric times. When they did act in close order, they charged either in line (one deep, the more lightly-armed esquires forming the second rank) or in deep column. Such a charge was undertaken, as a rule, against the knights (men-at-arms) only of the opposing army; upon its infantry it would have been wasted. The horses, heavily laden with their own as well as their rider's armor, could run but slowly and for short distances. During the crusades, therefore, and in the wars with the Mongolians in Poland and Silesia, this immovable cavalry was constantly tired out, and, finally, worsted by the active light horsemen of the East. In the Austrian and Burgundian wars against Switzerland, the men-at-arms, entangled in difficult ground, had to dismount and form a phalanx even more immovable than that of Macedon; in mountain defiles, rocks and stumps of trees were hurled down upon them, in consequence of which the phalanx lost its tactical order, and was scattered by a resolute attack.—Toward the 14th century a kind of lighter cavalry was introduced, and a portion of the archers were mounted to facilitate their manœuvring; but these and other changes were soon rendered useless, abandoned, or turned to different account by the introduction of that new element, which was destined to change the whole system of warfare—gunpowder.—

From the Arabs in Spain the knowledge of the composition and the use of gunpowder spread to France and the rest of Europe; the Arabs themselves had received it from nations further east, who again had it from the original inventors, the Chinese. In the first half of the 14th century cannon first was introduced into European armies; heavy, unwieldy pieces of ordnance, throwing stone balls, and unfit for any thing but the war of sieges. Small arms were, however, soon invented. The city of Perugia in Italy supplied itself in 1364, with 500 hand-guns, the barrels not more than eight inches long; they subsequently gave rise to the manufacture of pistols (so called from Pistoja in Tuscany). Not long afterward longer and heavier hand-guns (*arquebuses*) were manufactured, corresponding to our present musket; but short and heavy in the barrel, they had but a restricted range, and the matchlock was an almost absolute hinderance to correct aim, beside having nearly every other possible disadvantage. Toward the close of the 14th century there was no military force in western Europe without its artillery and arquebusiers. But the influence of the new arm on general tactics was very little perceptible. Both large and small fire-arms took a very long time in loading, and what with their clumsiness and costliness, they had not even superseded the crossbow by 1450.—In the mean time the general breaking up of the feudal system, and the rise of cities, contributed to change the composition of armies. The larger vassals were either subdued by central authority, as in France, or had become quasi-independent sovereigns, as in Germany and Italy. The power of the lesser nobility was broken by the central authority in conjunction with the cities. The feudal armies no longer existed; new armies were formed from the numerous mercenaries whom the ruin of feudalism had set free to serve those who would pay them. Thus, something approaching standing armies arose; but these mercenaries, men of all nations, difficult to keep in order, and not very regularly paid, committed very great excesses. In France, King Charles VII. therefore formed a permanent force from native elements. In 1445 he levied 15 *compagnies d'ordonnance* of 600 men each; in all, 9,000 cavalry garrisoned in the towns of the kingdom, and paid with regularity. Every company was divided into 100 lances; a lance consisted of one man-at-arms, 8 archers, an esquire, and a page. Thus they formed a mixture of heavy cavalry with mounted archers, the 2 arms, in battle, acting of course separately. In 1448 he added 16,000 francs-archers, under 4 captains-general, each commanding 8 companies of 500 men. The whole of the archers had the crossbow. They were recruited and armed by the parishes, and free from all taxes. This may be considered the first standing army of modern times.—At the close of this first period of modern tactics, as they emerged from mediæval confusion, the state of things may be summed up as follows:

The main body of the infantry, consisting of mercenaries, was armed with pike and sword, breastplate and helmet. It fought in deep, close masses, but, better armed and drilled than the feudal infantry, it showed greater tenacity and order in combat. The standing levies and the mercenaries, soldiers by profession, were of course superior to the casual levies and disconnected bands of feudal retainers. The heavy cavalry now found it sometimes necessary to charge in close array against infantry. The light infantry was still principally composed of archers, but the use of the hand-gun for skirmishers gained ground. The cavalry remained, as yet, the principal arm; heavy cavalry, men-at-arms encased in iron, but no longer composed, in every case, of the nobility, and reduced from its former chivalrous and Homeric mode of fighting to the more prosaic necessity of charging in close order. But the unwieldiness of such cavalry was now generally felt, and many devices were planned to find a lighter kind of horse. Mounted archers, as has been stated, had in part to supply this want; in Italy and the neighboring countries the *stradioti*, light cavalry on the Turkish plan, composed of Bosnians and Albanian mercenaries, a sort of Bashibazouks, found ready employment, and were much feared, especially in pursuits. Poland and Hungary had, beside the heavy cavalry adopted from the West, retained their own national light cavalry. The artillery was in its infancy. The heavy guns of the time were, indeed, taken into the field, but could not leave their position after it was once taken up; the powder was bad, the loading difficult and slow, and the range of the stone-balls short.—The close of the 15th and the beginning of the 16th century are marked by a double progress; the French improved the artillery, and the Spaniards gave a new character to the infantry. Charles VIII. of France so far made his guns movable that, not only could he take them into the field, but make them change their position during battle and follow the other troops in their movements, which, however, were not very quick. He thereby became the founder of field artillery. His guns, mounted on wheeled carriages and plentifully horsed, proved immensely superior to the old-fashioned clumsy artillery of the Italians (drawn by bullocks), and did such execution in the deep columns of the Italian infantry, that Machiavelli wrote his "Art of War" principally in order to propose formations, by which the effect of such artillery on infantry could be counteracted. In the battle of Marignano, Francis I. of France defeated the Swiss pikemen by the effective fire and the mobility of this artillery, which, from flanking positions, enfiladed the Swiss order of battle. But the reign of the pike, for infantry, was on the decline. The Spaniards improved the common hand-gun (*arquebuse*) and introduced it into the regular heavy infantry. Their musket (*haquebutte*) was a heavy, long-barrelled arm,

bored for 2-ounce bullets, and fired from a rest formed by a forked pole. It sent its bullet through the strongest breastplate, and was therefore decisive against the heavy cavalry, which got into disorder as soon as the men began falling. Ten or 15 musketeers were placed with every company of pikemen, and the effect of their fire, at Pavia, astonished both allies and enemies. Frundsberg relates that, in that battle a single shot from such a musket used to bring down several men and horses. From that time dates the superiority of the Spanish infantry, which lasted for above 100 years.—The war consequent upon the rebellion of the Netherlands was of great influence on the formation of armies. Both Spaniards and Dutch improved all arms considerably. Hitherto, in the armies of mercenaries, every man offering for enlistment had to come fully equipped, armed, and acquainted with the use of his arms. But in this long war, carried on during 40 years on a small extent of country, the available recruits of this class soon became scarce. The Dutch had to put up with such able-bodied volunteers as they could get, and the government now was under the necessity of seeing them drilled. Maurice of Nassau composed the first drill-regulations of modern times, and thereby laid the foundation for the uniform instruction of a whole army. The infantry began again to march in step; it gained much in homogeneity and solidity. It was now formed into smaller bodies; the companies, hitherto 400 to 500, were reduced to 150 and 200 men, 10 companies forming a regiment. The improved musket gained ground upon the pike; one-third of the whole infantry consisted of musketeers, mixed in each company with the pikemen. These latter, being required for hand-to-hand fight only, retained their helmet, breastplate, and steel gauntlets; the musketeers threw away all defensive armor. The formation was generally 2 deep for the pikemen, and from 5 to 8 deep for the musketeers; as soon as the first rank had fired, it retired to load again. Still greater changes took place in cavalry, and here, too, Maurice of Nassau took the lead. In the impossibility of forming a heavy cavalry of men-at-arms, he organized a body of light-horse recruited in Germany, armed them with a helmet, cuirass, brassards for the arms, steel gauntlets, and long boots, and as with the lance they would not have been a match for the heavy-armed Spanish cavalry, he gave them a sword and long pistols. This new class of horsemen, approaching our modern cuirassiers, soon proved superior to the far less numerous and less movable Spanish men-at-arms, whose horses they shot down before the slow mass broke in upon them. Maurice of Nassau had his cuirassiers drilled as well as his infantry; he so far succeeded, that he could venture to execute in battle, changes of front and other evolutions, with large and small bodies of them. Alva, too, soon found the necessity of improving his light horse; hitherto

they had been fit for skirmishing and single combat only, but under his direction they soon learned to charge in a body, the same as the heavy cavalry. The formation of cavalry remained still 5 to 8 deep. About this time Henry IV. of France introduced a new kind of mounted service, the dragoons, originally infantry, mounted on horses for quicker locomotion only; but very few years after their introduction, they were used as cavalry as well, and equipped for this double service. They had neither defensive armor nor high boots, but a cavalry sword, and sometimes a lance; beside, they carried the infantry musket, or a shorter carbine. These troops did not, however, come up to the expectations which had led to their formation; they soon became a portion of the regular cavalry, and ceased to fight as infantry. (The emperor Nicholas of Russia attempted to revive the original dragoons by forming a body of 16,000 men strong, fit for dismounted as well as mounted service; they never found occasion to dismount in battle, always fought as cavalry, and are now broken up and incorporated, as cavalry dragoons, with the remaining Russian cavalry.) In artillery the French maintained the superiority they had gained. The prolonge was invented by them about this time, and case-shot introduced by Henry IV. The Spaniards and Dutch, too, lightened and simplified their artillery, but still it remained a clumsy concern, and light, movable pieces of effective calibre and range were still unknown.—With the 30 years' war opens the period of Gustavus Adolphus, the great military reformer of the 17th century. His infantry regiments were composed of two-thirds musketeers, and one-third pikemen. Some regiments consisted of musketeers alone. The muskets were so much lightened, that the rest for firing them became unnecessary. He also introduced paper cartridges, by which loading was much facilitated. The deep formation was done away with; his pikemen stood 6, his musketeers only 3 deep. These latter were drilled in firing by platoons and ranks. The unwieldy regiments of 2,000 or 3,000 men were reduced to 1,300 or 1,400, in 8 companies, and 2 regiments formed into a brigade. With this formation he defeated the deep masses of his opponents, often disposed, like a column or full square, 80 deep, upon which his artillery played with terrible effect. The cavalry was reorganized upon similar principles. The men-at-arms were completely done away with. The cuirassiers lost the brassards, and some other useless pieces of defensive armor; they were thus made considerably lighter and more movable. His dragoons fought nearly always as cavalry. Both cuirassiers and dragoons were formed only 3 deep, and had strict orders not to lose time with firing, but to charge at once sword in hand. They were divided into squadrons of 125 men. The artillery was improved by the addition of light guns. The leather guns of Gustavus Adolphus are celebrated, but were not long retained.

They were replaced by cast-iron 4-pounders, so light that they could be drawn by 2 horses; they could be fired 6 times while a musketeer fired twice; 2 of these were attached to every regiment of infantry. Thus, the division of light and heavy field artillery was established; the light guns accompanied the infantry while the heavy ones remained in reserve, or took up a position for the whole of the battle. The armies of this time begin to show the increasing preponderance of infantry over cavalry. At Leipsic, in 1681, Gustavus Adolphus had 19,000 infantry and 11,000 cavalry; Tilly had 81,000 infantry and 18,000 cavalry. At Lützen, 1682, Wallenstein had 24,000 infantry and 16,000 cavalry (in 170 squadrons). The number of guns, too, increased with the introduction of light pieces; the Swedes often had from 5 to 12 guns for every 1,000 men; and at the battle of the Lech, Gustavus Adolphus forced the passage of that river under cover of the fire of 72 heavy guns. During the latter half of the 17th and the first half of the 18th century, the pike, and all defensive armor for infantry, was finally done away with by the general introduction of the bayonet. This weapon, invented in France about 1640, had to struggle 80 years against the pike. The Austrians first adopted it for all their infantry, the Prussians next; the French retained the pike till 1708, the Russians till 1791. The flint-lock, invented in France about the same time as the bayonet, was also gradually introduced, before the year 1700, into most armies. It materially abridged the operation of loading, protected, to some degree, the powder in the pan from rain, and thus contributed very much to the abolition of the pike. Yet firing was still so slow that a man was not expected to use more than from 24 to 86 cartridges in a battle; until in the latter half of this period improved regulations, better drill, and further improvement in the construction of small arms (especially the iron ramrod, first introduced in Prussia), enabled the soldier to fire with considerable rapidity. This necessitated a still further reduction of the depth of formation, and infantry was now formed only 4 deep. A species of *élite* infantry was created in the companies of grenadiers, originally intended to throw hand-grenades before coming to close quarters, but soon reduced to fight with the musket only. In some German armies riflemen had been formed as early as the 80 years' war; the rifle itself had been invented at Leipsic in 1498. This arm was now mixed with the musket, the best shots in each company being armed with it; but, out of Germany, the rifle found but little favor. The Austrians had also a sort of light infantry, called *pandours*: Croatian and Servian irregulars from the military frontier against Turkey, useful in roving expeditions and pursuit, but, from the tactics of the day and their absolute want of drill, useless in battle. The French and Dutch created, for similar purposes, irregular infantry called *compagnies franches*. Cavalry, too, was lightened

in all armies. There were no longer any men-at-arms; the cuirassiers maintained the breastplate and helmet only; in France and Sweden, the breastplate was done away with too. The increasing efficiency and rapidity of infantry fire told very much against cavalry. It was soon considered perfectly useless for this latter arm to charge infantry sword in hand; and the opinion of the irresistibility of a firing line became so prevalent that cavalry, too, was taught to rely more on its carbines than on the sword. Thus, during this period, it often occurs that 2 lines of cavalry maintain a firing fight against each other the same as if they were infantry; and it was considered very daring, to ride up to 20 yards from the enemy, fire a volley, and charge at a trot. Charles XII., however, stuck to the rule of his great predecessor. His cavalry never stopped to fire; it always charged, sword in hand, against any thing opposing it, cavalry, infantry, batteries, and intrenchments; and always with success. The French, too, broke through the new system and recommenced relying on the sword only. The depth of cavalry was still further reduced from 4 to 3. In artillery, the lightening of the guns, the use of cartridges and case-shot, became, now, general. Another great change was that of the incorporation of this arm with the army. Hitherto, though the guns belonged to the state, the men serving them were no proper soldiers, but formed a sort of guild, and artillery was considered not an arm but a handicraft. The officers had no rank in the army, and were considered more related to master-tailors and carpenters than to gentlemen with a commission in their pockets. About this time, however, artillery was made a component part of the army, and divided into companies and battalions; the men were converted into permanent soldiers, and the officers ranked with the infantry and cavalry. The centralization and permanence of the armed contingent upon this change, paved the way for the science of artillery, which, under the old system, could not develop itself.—The passage from deep formation to line, from the pike to the musket, from the supremacy of cavalry to that of infantry, had thus been gradually accomplished when Frederic the Great opened his campaigns, and, with them, the classical era of line tactics. He formed his infantry 3 deep, and got it to fire 5 times in 1 minute. In his very first battles at Mollwitz, this infantry deployed in line, and repelled, by its rapid fire, all charges of the Austrian cavalry, which had just totally routed the Prussian horse; after finishing with the cavalry, the Prussian infantry attacked the Austrian infantry, defeated it, and thus won the battle. Formation of squares against cavalry was never attempted in great battles, but only when infantry, on the march, was surprised by hostile cavalry. In a battle, the extreme wings of the infantry stretched round *en potence*, when menaced by cavalry, and this was generally found sufficient. To op-

pose the Austrian pandours, Frederic formed similar irregular troops, infantry and cavalry, but never relied on them in battle, where they seldom were engaged. The slow advance of the firing-line decided his battles. Cavalry, neglected under his predecessor, was now made to undergo a complete revolution. It was formed only 2 deep, and firing, except on pursuit, was strictly prohibited. Horsemanship, considered, hitherto, of minor importance, was now cultivated with the greatest attention. All evolutions had to be practised at full speed, and the men were required to remain well closed up. By the exertions of Seydlitz, the cavalry of Frederic was made superior to any other then existing or ever existing before it; and its bold riding, close order, dashing charge, and quick rallying, have never yet been equalled by any that succeeded it. The artillery was considerably lightened, and, indeed, so much that some of the heavy-calibred guns were not able to stand full charges, and had, therefore, to be abolished afterward. Yet the heavy artillery was still very slow and clumsy in its movements, owing to inferior and heavy carriages and imperfect organization. In battle, it took up its position from the first, and sometimes changed it for a second position, more in advance, but manœuvring, there was none. The light artillery, the regimental guns attached to the infantry, were placed in front of the infantry-line, 50 paces in advance of the intervals of the battalions; they advanced with the infantry, the guns dragged by the men, and opened fire with canister at 300 yards. The number of guns was very large, from 8 to 6 guns per 1,000 men. The infantry, as well as the cavalry, were divided into brigades and divisions, but as there was scarcely any manœuvring after the battle had once begun, and every battalion had to remain in its proper place in the line, these subdivisions had no tactical influence; with the cavalry, a general of brigade might, during a charge, now and then, have to act upon his own responsibility; but with the infantry, such a case could never occur. This line-formation, infantry in 3 lines in the centre, cavalry in 2 or 3 lines on the wings, was a considerable progress upon the deep formation of former days; it developed the full effect of infantry fire, as well as of the charge of cavalry, by allowing as many men as possible to act simultaneously; but its very perfection in this point confined the whole army, as it were, in a strait-waistcoat. Every squadron, battalion, or gun, had its regulated place in the order of battle, which could not be inverted or in any way disturbed without affecting the efficiency of the whole. On the march, therefore, every thing had to be so arranged that when the army formed front again for encampment or battle, every subdivision got exactly into its correct place. Thus, any manœuvres to be executed, had to be executed with the whole army; to detach a single portion of it for a flank attack, to form a particular reserve for the attack,

with superior forces, of a weak point, would have been impracticable and faulty with such slow troops, fit, only, to fight in line, and with an order of battle of such stiffness. Then, the advance in battle of such long lines was executed with considerable slowness, in order to keep up with the alignment. Tents followed the army constantly, and were pitched every night; the camp was slightly intrenched. The troops were fed from magazines, the baking establishments accompanying the army as much as possible. In short, the baggage and other train of the army were enormous, and hampered its movements to a degree unknown nowadays. Yet, with all these drawbacks, the military organization of Frederic the Great was by far the best of its day, and was eagerly adopted by all other European governments. The recruiting of the forces was almost everywhere carried on by voluntary enlistments, assisted by kidnapping; and it was only after very severe losses that Frederic had recourse to forced levies from his provinces.—When the war of the coalition against the French republic began, the French army was disorganized by the loss of its officers, and numbered less than 150,000 men. The numbers of the enemy were far superior; new levies became necessary, and were made to an immense extent, in the shape of national volunteers, of which, in 1793, there must have been at least 500 battalions in existence. These troops were not drilled, nor was there time to drill them according to the complicated system of line-tactics, and to the degree of perfection required by movements in line. Every attempt to meet the enemy in line was followed by a signal defeat, though the French had far superior numbers. A new system of tactics became necessary. The American revolution had shown the advantage to be gained with undisciplined troops, from extended order and skirmishing fire. The French adopted it, and supported the skirmishers by deep columns, in which a little disorder was less objectionable, so long as the mass remained well together. In this formation, they launched their superior numbers against the enemy, and were generally successful. This new formation and the want of experience of their troops led them to fight in broken ground, in villages and woods, where they found shelter from the enemy's fire, and where his line was invariably disordered; their want of tents, field-batteries, &c., compelled them to bivouac without shelter, and to live upon what the country afforded them. Thus they gained a mobility unknown to their enemies, who were encumbered with tents and all sorts of baggage. When the revolutionary war had produced, in Napoleon, the man who reduced this new mode of warfare to a regular system, combined it with what was still useful in the old system, and brought the new method at once to that degree of perfection which Frederic had given to line-tactics—then the French were almost invincible, until their opponents had learnt from them, and organized their ar-

mies upon the new model. The principal features of this new system are: the restoration of the old principle that every citizen is liable, in case of need, to be called out for the defence of the country, and the consequent formation of the army, by compulsory levies, of greater or less extent, from the whole of the inhabitants; a change by which the numeric force of armies was at once raised to three-fold the average of Frederic's time, and might, in case of need, be increased to larger proportions still. Then, the discarding of camp utensils, and of depending for provisions upon magazines, the introduction of the bivouac and of the rule that war feeds war; the celerity and independence of an army was hereby increased as much as its numeric force by the rule of general liability to serve. In tactical organization, the principle of mixing infantry, cavalry, and artillery in the smaller portions of an army, in corps and divisions, became the rule. Every division thus became a complete army on a reduced scale, fit to act independently, and capable of considerable power of resistance even against superior numbers. The order of battle, now, was based upon the column; it served as the reservoir, from which sallied and to which returned, the swarms of skirmishers; as the wedge-like compact mass to be launched against a particular point of the enemy's line; as the form to approach the enemy and then to deploy, if the ground and the state of the engagement made it desirable to oppose firing-lines to the enemy. The mutual supporting of the 8 arms developed to its full extent by their combination in small bodies, and the combination of the 8 forms of fighting; skirmishers, line, and column, composed the great tactical superiority of modern armies. Any kind of ground, thereby, became fit for fighting in it; and the ability of rapidly judging the advantages and disadvantages of ground, and of at once disposing troops accordingly, became one of the chief requirements of a captain. And not only in the commander-in-chief, but in the subordinate officers, these qualities, and general aptness for independent command, were now a necessity. Corps, divisions, brigades, and detachments, were constantly placed in situations where their commanders had to act on their own responsibility; the battle-field no longer presented its long unbroken lines of infantry disposed in a vast plain with cavalry on the wings; but the single corps and divisions, massed in columns, stood hidden behind villages, roads, or hills, separated from each other by seemingly large intervals, while but a small portion of the troops appeared actually engaged in skirmishing and firing artillery, until the decisive moment approached. Lines of battle extended with the numbers and with this formation; it was not necessary actually to fill up every interval with a line visible to the enemy, so long as troops were at hand to come up when required. Turning of flanks now became generally a strategic operation, the stronger army placing itself

completely between the weaker one and its communications, so that a single defeat could annihilate an army and decide a campaign. The favorite tactical manœuvre was the breaking through the enemy's centre, with fresh troops, as soon as the state of affairs showed that his last reserves were engaged. Reserves, which in line-tactics would have been out of place and would have deducted from the efficiency of the army in the decisive moment, now became the chief means to decide an action. The order of battle, extending as it did in front, extended also in depth; from the skirmishing line to the position of the reserves the depth was very often 2 miles and more. In short, if the new system required less drill and parade-precision, it required far greater rapidity, exertions, and intelligence from every one, from the highest commander as well as the lowest skirmisher; and every fresh improvement made since Napoleon, tends in that direction.—The changes in the *matériel* of armies were but trifling during this period; constant wars left little time for such improvements the introduction of which requires time. Two very important innovations took place in the French army shortly before the revolution; the adoption of a new model of musket of reduced calibre and windage, and with a curved stock instead of the straight one hitherto in use. This weapon, more accurately worked, contributed a great deal toward the superiority of the French skirmishers, and remained the model upon which with trifling alterations the muskets in use in all armies up to the introduction of percussion locks, were constructed. The second was the simplification and improvement of the artillery by Gribeauval. The French artillery under Louis XV. was completely neglected; the guns were of all sorts of calibres, the carriages were old-fashioned, and the models upon which they were constructed not even uniform. Gribeauval, who had served during the 7 years' war with the Austrians, and there seen better models, succeeded in reducing the number of calibres, equalizing and improving the models, and greatly simplifying the whole system. It was with his guns and carriages that Napoleon fought his wars. The English artillery, which was in the worst possible state when the war with France broke out, was gradually, but slowly, considerably improved; with it originated the block-tail carriage, which has since been adopted by many continental armies, and the arrangement for mounting the foot artillerymen on the limbers and ammunition wagons. Horse artillery, invented by Frederic the Great, was much cultivated during Napoleon's period, especially by himself, and its proper tactics were first developed. When the war was over, it was found that the British were the most efficient in this arm. Of all large European armies, the Austrian is the only one which supplies the place of horse-artillery by batteries in which the men are mounted on wagons provided for the purpose.—The German armies still

kept up the especial class of infantry armed with rifles, and the new system of fighting in extended order gave a fresh importance to this arm. It was especially cultivated, and in 1838 taken up by the French, who felt the want of a long range musket for Algiers. The *tirailleurs de Vincennes*, afterward *chasseurs à pied*, were formed, and brought to a state of efficiency without parallel. This formation gave rise to great improvements in rifles, and by which both range and precision were increased to a wonderful degree. The names of Delvigne, Thouvenot, Minié, became celebrated thereby. For the totality of the infantry, the percussion lock was introduced between 1830 and 1840 in most armies; as usual, the English and the Russians were the last. In the mean time, great efforts were made in various quarters still further to improve small arms, and to produce a musket of superior range which could be given to the whole of the infantry. The Prussians introduced the needle gun, a rifle arm loaded at the breech, and capable of very rapid firing, and having a long range; the invention, originated in Belgium, was considerably improved by them. This gun has been given to all their light battalions; the remainder of the infantry have recently got their old muskets, by a very simple process, turned into Minié rifles. The English were the first this time to arm the whole of their infantry with a superior musket, viz., the Enfield rifle, a slight alteration of the Minié; its superiority was fully proved in the Crimea, and saved them at Inkermann.—In tactical arrangements, no changes of importance have taken place for infantry and cavalry, if we except the great improvement of light infantry tactics by the French *chasseurs*, and the new Prussian system of columns of companies, which latter formation, with perhaps some variations, will no doubt soon become general from its great tactical advantages. The formation is still 8 deep with the Russians and Austrians, the English have formed 2 deep ever since Napoleon's time; the Prussians march 8 deep, but mostly fight 2 deep, the 3d rank forming the skirmishers and their supports; and the French, hitherto formed 8 deep, have fought 2 deep in the Crimea, and are introducing this formation in the whole army. As to cavalry, the Russian experiment of restoring the dragoons of the 17th century and its failure have been mentioned.—In artillery, considerable improvements of detail and simplification of calibres, and models for wheels, carriages, &c., have taken place in every army. The science of artillery has been greatly improved. Yet no considerable changes have taken place. Most continental armies carry 6 and 12-pounders; the Piedmontese 8 and 16-pounders; the Spanish 8 and 12-pounders; the French, who hitherto had 8 and 12-pounders, are now introducing Louis Napoleon's so-called howitzer gun, a simple light 12-pounder, from which small shells are also fired, and which is to replace every other kind of field gun. The British have 8

and 6-pounders in the colonies, but in their armies sent out from England, now only use 9-pounders, 12-pounders, and 18-pounders. In the Crimea they even had a field battery of 32-pounders, but it always stuck fast.—The general organization of modern armies is very much alike. With the exception of the British and American, they are recruited by compulsory levy, based either upon conscription, in which case the men, after serving their time, are dismissed for life, or upon the reserve system, in which the time of actual service is short, but the men remain liable to be called out again for a certain time afterward. France is the most striking example of the first, Prussia of the second system. Even in England, where both line and militia are generally recruited by voluntary enlistment, the conscription (or ballot) is by law established for the militia should volunteers be wanting. In Switzerland, no standing army exists; the whole force consists of militia drilled for a short time only. The enlistment of foreign mercenaries is still the rule in some countries; Naples and the Pope still have their Swiss regiments; the French their foreign legion; and England, in case of serious war, is regularly compelled to resort to this expedient. The time of actual service varies very much; from a couple of weeks with the Swiss, 18 months to 2 years with the smaller German states, and 3 years with the Prussians, to 5 or 6 years in France, 12 years in England, and 15 to 25 in Russia. The officers are recruited in various ways. In most armies there are now no legal impediments to advancement from the ranks, but the practical impediments vary very much. In France and Austria a portion of the officers must be taken from the sergeants; in Russia the insufficient number of educated candidates makes this a necessity. In Prussia the examination for officers' commissions, in peace, is a bar to uneducated men; in England advancement from the ranks is a rare exception. For the remainder of the officers, there are in most countries military schools, though with the exception of France, it is not necessary to pass through them. In military education the French, in general education the Prussian officers are ahead; the English and the Russians stand lowest in both. As to the horses required, we believe Prussia is the only country in which the equine population too is subject to compulsory levies, the owners being bought off at fixed rates. With the exceptions named above, the equipment and armament of modern armies is now everywhere nearly the same. There is, of course, a great difference in the quality and workmanship of the material. In this respect, the Russians stand lowest, the English, where the industrial advantages at their command are really made use of, stand highest. The infantry of all armies is divided into line and light infantry. The 1st is the rule, and composes the mass of all infantry; real light infantry is everywhere the exception. Of this latter, the French have at present decidedly

the best in quality and a considerable number: 21 battalions of chasseurs, 9 of Zouaves, and 6 of native Algerian tirailleurs. The Austrian light infantry, especially the rifles, are very good, too; there are 82 battalions of them. The Prussians have 9 battalions of rifles and 40 of light infantry; the latter, however, not sufficiently up in their special duty. The English have no real light infantry, except their 6 battalions of rifles, and are, next to the Russians, decidedly the least fit for that kind of duty. The Russians may be said to be without any real light infantry, for their 6 rifle battalions vanish in their enormous army.—Cavalry, too, is everywhere divided into heavy and light. Cuirassiers are always heavy, hussars, chasseurs, chevau-légers, always light horse. Dragoons and lancers are in some armies light, in others heavy cavalry; and the Russians would also be without light cavalry were it not for the Cossacks. The best light cavalry is undoubtedly that of the Austrians, the national Hungarian hussars and Polish hussars. The same division holds good with artillery, with the exception of the French, who as stated now have only one calibre. In other armies there are still light and heavy batteries, according to the calibres attached to them. Light artillery is still subdivided in horse and foot, the 1st especially intended to act in company with cavalry. The Austrians, as stated, have no horse artillery; the English and French have no proper foot-artillery, the men being carried on the limbers and ammunition wagons.—The infantry is formed into companies, battalions, and regiments. The battalion is the tactical unity; it is the form in which the troops fight, a few exceptional cases left aside. A battalion, therefore, must not be too strong to be commanded by the voice and eye of its chief, nor too weak to act as an independent body in battle, even after the losses of a campaign. The strength, therefore, varies from 600 to 1,400 men; 800 to 1,000 forms the average. The division of a battalion into companies has for its object the fixing of its evolutionary subdivisions, the efficiency of the men in the details of the drill, and the more commodious, economical administration. Practically, companies appear as separate bodies in skirmishing only, and with the Prussians, in the formation in columns of companies, where each of the 4 companies forms columns in 3 platoons; this formation presupposes strong companies, and they are in Prussia 250 strong. The number of companies in a battalion varies as much as their strength. The English have 10, of from 90 to 120 men, the Russians and Prussians 4 of 250 men, the French and Austrians 6 of varying strength. Battalions are formed into regiments, more for administrative and disciplinary purposes and to insure uniformity of drill, than for any tactical object; in formations for war, therefore, the battalions of one regiment are often separated. In Russia and Austria there are 4, in Prussia 3, in France 2 service

battalions, beside depots to every regiment; in England, most regiments are formed, in peace, of but 1 battalion. Cavalry is divided into squadrons and regiments. The squadron from 100 to 200 men, forms the tactical and administrative unity; the English alone subdivide the squadron, for administrative purposes, into 2 troops. There are from 3 to 10 service squadrons to a regiment; the British have, in peace, but 8 squadrons, of about 120 horse; the Prussians 4 of 150 horse; the French 5 of 180 to 200 horse; the Austrians 6 or 8 of 200 horse; the Russians 6 to 10 of 150 to 170 horse. With cavalry the regiment is a body of tactical significance, as a regiment offers the means to make an independent charge, the squadrons mutually supporting each other, and is for this purpose formed of sufficient strength, viz., between 500 and 1,600 horse. The British alone have such weak regiments that they are obliged to put 4 or 5 of them to 1 brigade; on the other hand, the Austrian and Russian regiments in many cases are as strong as an average brigade. The French have nominally very strong regiments, but have hitherto appeared in the field in considerably reduced numbers, owing to their poverty in horses. Artillery is formed in batteries; the formation in regiments or brigades in this arm is only for peace purposes, as almost in every case of actual service the batteries are sure to become separated, and are always used so. Four guns is the least number, and the Austrians have 8; the French and English 6 guns per battery. Riflemen or other real light infantry are generally organized in battalions and companies only, not in regiments; the nature of the arm is repugnant to its reunion in large masses. The same is the case with sappers and miners, they being, beside, but a very small portion of the army. The French alone make an exception in this latter case; but their 8 regiments, sappers and miners, count only 6 battalions in all. With the regiment the formation of most armies in time of peace is generally considered complete. The larger bodies, brigades, divisions, army-corps, are mostly formed when war breaks out. The Russians and Prussians alone have their army fully organized and the higher commands filled up, as if for actual war. But in Prussia this is completely illusory, unless at least a whole army-corps be mobilized, which supposes the calling in of the landwehr of a whole province; and if in Russia the troops are actually with the regiments, yet the late war has shown that the original divisions and corps very soon got mixed, so that the advantage gained from such a formation is more for peace than for war.—In war, several battalions or squadrons are formed into a brigade; from 4 to 8 battalions for infantry, or from 6 to 20 squadrons for cavalry. With large cavalry regiments these latter may very well stand in lieu of brigade; but they are very generally reduced to smaller strength by the detachments they have to send to the divisions. Light and line infantry may

with advantage be mixed in a brigade, but not light and heavy cavalry. The Austrians very generally add a battery to each brigade. A combination of brigades forms the division. In most armies, it is composed of all the 3 arms, say 2 brigades of infantry, 4 to 6 squadrons, and 1 to 3 batteries. The French and Russians have no cavalry to their divisions, the English form them of infantry exclusively. Unless, therefore, these nations wish to fight at a disadvantage, they are obliged to attach cavalry (and artillery respectively) to the divisions whenever the case occurs; which is easily overlooked or often inconvenient or impossible. The proportion of divisionary cavalry, however, is everywhere but small, and therefore the remainder of this arm is formed into cavalry divisions of 2 brigades each, for the purpose of reserve cavalry. Two or 3 divisions, sometimes 4, are, for larger armies, formed into an army-corps. Such a corps has everywhere its own cavalry and artillery, even where the divisions have none; and, where these latter are mixed bodies, there is still a reserve of cavalry and artillery placed at the disposal of the commander of the corps. Napoleon was the first to form these, and, not satisfied therewith, he organized the whole of the remaining cavalry into reserve cavalry-corps of 2 or 3 divisions of cavalry with horse-artillery attached. The Russians have retained this formation of their reserve cavalry, and the other armies are likely to take it up again in a war of importance, though the effect obtained has never yet been in proportion to the immense mass of horsemen thus concentrated on one point. Such is the modern organization of the fighting part of an army. But, in spite of the abolition of tents, magazines, field-bakeries, and bread-wagons, there is still a large train of non-combatants and of vehicles necessary to insure the efficiency of the army in a campaign. To give an idea of this, we will only state the train required, according to the existing regulations, for 1 army-corps of the Prussian service:—

Artillery train: 6 park columns of 30 wagons, 1 laboratory do., 6 wagons.

Pontoon train: 84 pontoon wagons, 5 tool wagons, 1 sarge.

Infantry train: 116 wagons, 108 team horses.

Medical train: 50 wagons (for 1,600 or 2,000 sick).

Reserve commissariat train: 150 wagons.

Reserve train: 1 wagon, 75 reserve horses.

In all, 462 wagons, 1,751 horses, 3,000 men.

To enable the commanders of armies, army-corps and divisions to conduct, each in his sphere, the troops intrusted to him, a separate corps is formed in every army except the British, composed of officers exclusively, and called the *staff*. The functions of these officers are to reconnoitre and sketch the ground on which the army moves or may move; to assist in making out plans for operations, and to arrange them in detail so that no time is lost, no confusion arises, no useless fatigue is incurred by the troops. They are, therefore, in highly important positions, and ought to have a thoroughly finished military education, with a full knowl-

edge of the capabilities of each arm on the march and in battle. They are accordingly taken in all countries from the most able subjects, and carefully trained in the highest military schools. The English alone imagine any subaltern or field-officer selected from the army at large is fit for such a position, and the consequence is that their staffs are inferior, and the army incapable of any but the slowest and simplest manœuvres, while the commander, if at all conscientious, has to do all the staff work himself. A division can seldom have more than one staff-officer attached, an army-corps has a staff of its own under the direction of a superior or a staff-officer, and an army has a full staff, with several generals, under a chief who, in urgent cases, gives his orders in the name of the commander. The chief of the staff, in the British army, has an adjutant-general and a quartermaster-general under his orders; in other armies the adjutant-general is at the same time chief of the staff; in France the chief of the staff unites both capacities in himself, and has a different department for each under his orders. The adjutant-general is the chief of the *personnel* of the army, receives the reports of all subordinate departments and bodies of the army, and arranges all matters relative to discipline, instruction, formation, equipment, armament, &c. All subordinates correspond through him with the commander-in-chief. If chief of the staff at the same time, he coöperates with the commander in the formation and working out of plans of operation and movements for the army. The proper arrangement of these in detail is the department of the quartermaster-general; the details of marches, cantonments, encampments, are prepared by him. A sufficient number of staff-officers are attached to head-quarters for reconnoitring the ground, preparing projects as to the defence or attack of positions, &c. There is, beside, a commander-in-chief of the artillery, and a superior engineer-officer for their respective departments; a few deputies to represent the chief of the staff on particular points of the battle-field, and a number of orderly officers and orderlies to carry orders and despatches. To the head-quarters are further attached the chief of the commissariat, with his clerks, the paymaster of the army, the chief of the medical department, and the judge-advocate, or director of the department of military justice. The staffs of the army-corps and divisions are regulated on the same model, but with greater simplicity and a reduced *personnel*; the staffs of brigades and regiments are still less numerous, and the staff of a battalion may consist merely of the commander, his adjutant, an officer as paymaster, a sergeant as clerk, and a drummer or bugleman. To regulate and keep up the military force of a great nation, numerous establishments, beside those hitherto named, are required. There are recruiting and remounting commissioners, the latter often connected with the administration of national establishments for the breeding of horses, milita-

ry schools for officers and non-commissioned officers, model battalions, squadrons, and batteries, normal riding schools, and schools for veterinary surgeons. There are in most countries national foundries and manufactories for small arms and gunpowder; there are the various barracks, arsenals, stores, the fortresses with their equipments and the staff of officers commanding them; finally, there are the commissariat and general staff of the army, which, for the whole of the armed force, are even more numerous and have more expensive duties to perform than the staff and commissariat of a single active army. The staff especially has very important duties. It is generally divided into a historical section (collecting materials relative to the history of war, the formation of armies, &c., past and present), a topographical section (intrusted with the collection of maps and the trigonometrical survey of the whole country), a statistical section, &c. At the head of all these establishments, as well as of the army, stands the ministry of war, organized differently in different countries, but comprising, as must be evident from the preceding observations, a vast variety of subjects. As an example we give the organization of the French ministry of war. It comprises 7 directions or divisions: 1, of the *personnel*; 2, of the artillery; 3, of the engineers and fortresses; 4, of administrative affairs; 5, of Algeria; 6, war depot (historical, topographical, &c., and sections of the staff); 7, finances of the war department. Immediately attached to the ministry are the following consultative commissions, composed of general and field-officers and professional men, viz.: the committees of the staff of infantry, of cavalry, of artillery, of fortification, of medical affairs, and the commissions for veterinary science and for public works. Such is the vast machinery devoted to recruiting, remounting, feeding, directing, and always reproducing a modern first class army. The masses brought together correspond to such an organization. Though Napoleon's grand army of 1812, when he had 900,000 men in Spain, 900,000 in France, Italy, Germany, and Poland, and invaded Russia with 450,000 men and 1,300 guns, has never yet been equalled; though we shall most likely never see such an army again united for one operation as these 450,000 men, yet the large continental states of Europe, Prussia included, can each of them raise an armed and disciplined force of 500,000 men, and more; and their armies, though not more than from $1\frac{1}{2}$ to 8 per ct. of their population, have never yet been reached at any former period of history.—The system of the United States bases the defence of the country substantially on the militia of the different states, and on volunteer armies raised as occasion demands; the standing military force, employed mainly in preserving order among the Indian tribes of the West, consisting, according to the report of the secretary of war for 1857, of only about 18,000 men.

ARNAL, a small Portuguese village about 4

miles N. W. from Batalha and 8 miles S. W. from Leiria, celebrated for the remains of a Roman villa discovered there in Aug. 1857, by the Rev. Dr. Patrick B. Russell, rector of the college of Corpo Santo of Lisbon. This gentleman, while examining the geological formation and character of the country, observed in a field some portion of tessellated pavement, which he thought might be of Roman origin. He purchased the right to excavate, and set laborers to work. They at length brought into view a most interesting specimen of Roman mosaic pavement, of an extent much greater than is usually found, and at a depth of about 8 feet below the surface. This discovery is doubly interesting, as the pavement constitutes the flooring of a house or villa, divided into several chambers, the separating walls of which, as well as the external walls of the house, still remain to the height of about $1\frac{1}{2}$ foot. The country around Arnal is of great fertility, and abounds with coal and iron ore. The recent discovery of coal in the valley of Batalha, lends a new interest to the district. The Romans had smelting establishments at Porto da Moz, Alqueidao, Val d'Orta, Necessidades, and other places, including Arnal. Some pieces of the pigment, 6 inches long, 4 wide, and 8 thick, have been found in the mounds of slag, most of which are now covered by venerable oaks.

ARNALL, WILLIAM, an English attorney's clerk, born 1715, died in 1741. He was a political writer in the pay of the English minister, Sir Robert Walpole. It appears, from the report of a secret committee, that in 4 years he received £10,997 6s. 8d. for his pamphlets; yet he died in a desponding frame of mind, and in debt.

ARNAO, VICENTE GONZALEZ, Spanish lawyer and writer, born at Madrid. Joseph Bonaparte made him secretary of the council of state in 1809. On the evacuation of Madrid he retired to France, and remained in that country until 1831. On his return he was appointed a member of the royal council of Spain and the Indies. He translated Humboldt's work on Mexico into Spanish.

ARNAOUTS, Albanians employed in the Turkish military service as irregulars. They are brave, good marksmen, and expert in the use of arms, but reckless, brutal, and mutinous.

ARNAUD, FRANÇOIS THOMAS MARIE BACULARD D', a French dramatist born at Paris, Sept. 18, 1718, died there Nov. 8, 1805. While still very young he wrote 3 tragedies, 2 of which brought him into contact with Voltaire, and subsequently with Frederic the Great, who took a fancy to Arnaud, made him his literary correspondent at Paris, and invited him to come to Berlin. Voltaire, on being informed that Frederic flattered Arnaud at his expense, took his revenge upon poor Arnaud, who was accordingly ridiculed in Paris, while he was lionized in Berlin. After having swallowed with good grace the bad French of the Prussian king, Arnaud betook himself to Dresden, where, for some time,

he resided as secretary of legation. On his return to France, his novels and plays found a large circle of readers among people with a strong bias for the gloomy and terrible. But he did not reap the benefits of his success, as on leaving the prison, into which, during the revolution, he had been thrown, he was in very reduced circumstances, and had to struggle with poverty from that time until his death.

ARNAUD, Mademoiselle H., a French authoress, better known by her *nom de plume* of "Madame Charles Reybaud." Her writings, consisting mostly of novels, short tales or *feuilletons* for the Paris press, have obtained a considerable reputation in France. They are marked by felicitous pictures of life and nature in various times and countries. *Les anciens couvents de Paris*, one of her latest works, has been translated into English, and affords some striking pictures of monastic life. Among her numerous publications, those which have been most highly esteemed are *Mlle. de Chasseuil*, *Madame de Rieux*, *Marie d'Encombres*, *Les deux Marguerites*, *Gabrielle*, *Mélie*, and *Le dernier oblat*.

ARNAULD. A remarkable French family of this name originated in Provence, where it occupied a prominent position as early as the 12th century. A branch of this family removed to Auvergne in the 14th century. Three members of this Auvergne branch are especially worthy of notice. I. ANTOINE, an advocate, born at Paris 1560, died there Dec. 29, 1619, raised himself to celebrity by a speech against the Jesuits, in favor of the university of Paris (1594). He was a Catholic, though the Jesuits accused him of being a Huguenot. He was the father of 20 children. II. ROBERT, eldest son of the preceding, born at Paris in 1588, died at the Port Royal, Sept. 27, 1674. Like his father, he distinguished himself in a plea for the university of Paris, against the Jesuits, which has been much circulated in France since. He also published several other works against the Jesuits, who accused him of being a Huguenot. It is certain that he was violently opposed to the league of 1576. He was a sincere and upright man. Balzac says of him "he was not ashamed of Christian virtues, nor proud of moral ones." At the age of 55 he retired to the convent of Port Royal, where he spent the remainder of his life in solitude. Here he turned his attention more undividedly to theology, and wrote and translated many works. III. ANTOINE, 20th son of the same father with the preceding, born at Paris, Feb. 6, 1612, died there Aug. 6, 1694. He inherited from his father a love of polemical theology, and a violent hatred of the Jesuits, against whom he early took the field, and never quitted it till the day of his death. This body, after their expulsion from France through the labors and influence of the father, returned only to find that the son reigned in his stead. He first studied law, but was ordained a priest in 1641. In 1643 we find him making that attack upon the Jesuits, the publi-

cation of which has become an era in the history of the eucharist, *De la fréquente communion*, which was followed by his admission to the Sorbonne. Next he published his severe strictures on Jesuitic morals. Jansenism had early enlisted his attention, and he now became its most powerful advocate. The Jansenist speculations on the intricate subjects of divine grace and human freedom, were perfectly suited to his mind. He soon put himself at the head of the Port Royal, although those eminent scholars, Nicole, Pascal, and Perrault, had preceded him. From this time he was the great oracle of Jansenism. He was now expelled from the Sorbonne for his controversial attitude, and 80 fellow-doctors, refusing to approve the expulsion, followed him. From his retirement at the Port Royal, he hurled more vigorously than ever the bolts of strife. Pascal's famous *Lettres provinciales* added new fuel to the flames. Arnauld was the soul of these letters, furnishing to Pascal the materials and facts which he adroitly used against the Jesuits. The contention ran so high, and the Jansenist party were acquiring such influence, that Clement IX. thought best to secure the peace of the church by a compromise, called the peace of Clement. This conciliation so softened the asperities of Arnauld's temper, that he followed it with a work on the eucharist, dedicated to the pope. This furnished him a new antagonist in the reformed clergy, who violently attacked him. He replied in an elaborate work against the Calvinistic doctrine of justification, which he charged with reversing the teachings of Christ. He did not, meanwhile, neglect his old antagonists, the Jesuits, but published 8 volumes of strictures on their casuistry. Through the influence of Harlay with the king, Louis XIV., an order was issued for his arrest. To avoid this, Arnauld fled to Brussels. Here he wrote a defence of the Jesuits, his old antagonists, from the charges of Oates's conspiracy. Here also he attacked the prince of Orange, William III., styling him Absalom, Herod, and Cromwell. From Brussels he also took up the gauntlet against the philosophy of Malebranche, and wrote so bitterly as to sour and alienate that philosopher, who had before been his friend. Himself a Cartesian, Arnauld was a personal friend of Leibnitz, and entertained the hope of converting him. In all the bitterness of the contentions in which a restless spirit involved him, he seems to have had a frankness and sincerity which never failed to secure personal friends among his opponents; and even when engaged in the exceedingly difficult triangular contest with Jesuits and Reformers, and under the disadvantage of an expulsion from the Sorbonne, he managed to preserve the respect of all, and the personal admiration of many on both sides. He was one of the most learned men of his age, sincere, but of an independent mind, simple in his habits, exemplary in his conduct, and a Catholic in spirit. The Jesuits denominated him "the great Arnauld."

ARNAULT, VINCENT ANTOINE, a French poet, born at Paris, Jan. 1, 1766, died near Havre, Sept. 16, 1884; became first known to fame by 2 tragedies, *Marius à Minturnes* and *Luocrèce*. On the revolutionary outbreak in Sept. 1792, he went to London and Brussels, and on his return, in 1798, he was arrested; but as soon as it transpired that he was the author of *Marius à Minturnes*, he was set free. In 1797 Bonaparte sent him on a mission to the Ionian islands; and on his return, in 1798, he was made prisoner by the English, but soon recovered his liberty. In 1799 he produced, in Paris, a tragedy suggested to him by his residence at Venice, which was very favorably received, especially by Napoleon himself, before whom he delivered several lectures on Venice. He became, in the same year, member of the French academy; in 1805 he was elevated to the vice-presidency, and in 1808 to the principal secretaryship of the council of the university. All these offices were taken from him after the emperor's downfall, but restored to him during the Hundred Days.

ARND, JOHANN, a German theologian, born at Ballenstedt, in the duchy of Anhalt-Bernburg, Dec. 27, 1595, died at Cella, May 11, 1621. After having studied chemistry and medicine in several German universities, he applied himself to theology, and was pastor successively at Paderborn and Quedlinburg. In 1599 he was appointed preacher to the court at Brunswick. In 1611 he was presented by the duke of Lüneburg to the church at Cella, and he soon after became superintendent of all the churches of the duchy, in which office he remained till his death. His writings are marked by great fervor of devotion, and he has been called the Fenelon and the A Kempis of the Protestant church. His principal work on "True Christianity" has been translated into almost all languages, and is esteemed alike by scholars and people of humble life. Its piety approaches to mysticism, and it was therefore attacked, during the lifetime of its author, as a dangerous and heretical production. The limited resources of Arnd, joined to the fact that he gave constantly and liberally to the poor, gave rise to a belief, in that age of astrology and alchemy, that he had discovered at last the philosopher's stone, the long-sought secret of making gold.

ARNDT, ERNST MORITZ, a German patriot, and professor of history at the university of Bonn, born Dec. 26, 1769, at Schoritz, on the island Rügen. He studied theology and philosophy at Greifswald and Jena, and after travelling over Europe was appointed professor at Greifswald, where he soon published his "History of Serfdom in Pomerania and Rügen," which roused the wrath of some members of the Pomeranian nobility. In 1807 appeared the first volume of his "Spirit of the Times," containing his attack against Napoleon. Napoleon was then at the zenith of his power, and the German princes trembled at the very whisper of his voice. Arndt had to pay the penalty of his courage, and was expelled from the

country. He betook himself to Stockholm, and, under a feigned name, supported himself by teaching languages. In 1810 he ventured, under this incognito, back to Greifswald, but, on hearing of the Russian campaign, he proceeded in 1812 to St. Petersburg, and published pamphlet after pamphlet to rouse the public mind of Europe from its lethargy. Stein, the celebrated minister, was the first to sympathize with his views, and assisted him as much as he could. His cry was, if Napoleon is successful in Russia, Germany is undone. At this time he wrote his book defining the Rhine as a German river, and also his stirring national songs. In 1818 he became professor of modern history at Bonn, but he had hardly been lecturing a year when he was compelled to withdraw from the university. His liberal ideas had again given offence at Potsdam. He was tried for treason, but no verdict could be found against him; yet it was not till 20 years afterward, in 1840, that the king would allow the professor to teach history again. In 1848 he was sent as deputy to the Frankfort parliament by the 15th electoral district of Rhenish Prussia; he retained his seat until May 21, 1849, when he withdrew from parliament with the whole constitutional party, which was in favor of an hereditary empire. Arndt's first wife died in 1801. His second wife, to whom he was married in 1817, is the daughter of the celebrated Schleiermacher. He is the author of various historical and other works. His most popular song is his *Was ist des Deutschen Vaterland?*

ARNE, THOMAS AUGUSTINE, an English composer of music, born in London in 1710, died March 5, 1778. His father, an upholsterer, gave him a good education at Eton, and bound him apprentice to an attorney, with whom he remained three years. Young Arne, however, manifested so decided a taste for music, which he gratified in secret, and sometimes in the most whimsical manner, that his acquirements in the law were but moderate, while in his favorite art, although comparatively unaided, he made rapid progress. The consent of the father, who accidentally became aware of the bent of his son's genius, having been obtained, he devoted himself exclusively to musical composition, and in 1731 set to music Addison's "Rosamond" and Fielding's "Tom Thumb," under the name of the "Opera of Operas," both of which were received with much favor. In 1738 he wrote the music to Milton's "Comus," a work full of original and sprightly melodies, the production of which formed an era in the history of English music, and firmly established the reputation of the composer. During the next twenty years he wrote operas for Drury lane theatre, oratorios, and a vast number of songs—adding very considerably to the stock of standard English musical compositions. In 1762 his most famous work, "Artaxerxes," an opera after the Italian style, was produced, and for many years held a prominent place on the

lyric stage. His other most successful works were the "Judgment of Paris," "Eliza," "Britannia," a musical farce, entitled "Thomas and Sally," the "Fairies," and the "Stratford Jubilee." His oratorios, owing to the competition of Handel's works, were comparative failures. As a composer of songs, Dr. Arne was unsurpassed by any English writer since the time of Purcell; and many of them, such as "Rule Britannia," "The Soldier Tired," and some of the Shakespeare songs, have maintained their hold upon popular favor to the present day. He married in 1740 Cecilia Young, afterward a distinguished singer, and in 1769 received from the university of Oxford the degree of doctor in music. He died in the Roman Catholic faith. Dr. Arne had neither the vigor of Purcell nor the grandeur and simplicity of Handel; but his melodies are always pleasing, elegant, and appropriate, and his harmonies, without showing great learning, have a fullness and variety which amply satisfy the hearer.

ARNHEM, also ARNHEM, a fortified town of the Netherlands, capital of the province of Gelderland, on the right bank of the Rhine, over which river it is approached by a bridge of boats. It is connected with Utrecht by railway. Its population in 1850 was 18,671. It has a school of art, a gymnasium, and several learned societies. It is a town of Roman origin (*Arenæum*). In a charter of Otho I., 996, it is spoken of as a village. In 1233 it was chosen by Otho III., duke of Gelderland, as the ducal place of residence, and strongly fortified. In 1473 it was conquered by Charles the Rash of Burgundy, in 1499 by Karl Egmont, duke of Gelderland, or Gueldres, and in 1505 by the Spaniards, but was recaptured by Duke Karl. After his death it went to the duchy of Cleves, and then with Gelderland to Charles V. of Spain and Germany. In 1585 the Dutch captured it, and it thenceforward belonged to the United Provinces. In 1672 the French conquered it, but abandoned it in 1674. In 1794 it fell again into the hands of the French invading army, and in 1813 was taken by storm by Bulow and his Prussians. In 1586 Sir Philip Sidney, the English knight, scholar, and poet, died here of a wound received in the battle of Zutphen.

ARNICA, a genus of plants of the natural order *compositæ*. It grows in the mountainous districts of the north and middle of Europe, blossoming in June and July. In Germany the flowers, leaves, and root, are all employed in medicine, principally in cases of low fevers and nervous diseases. A tincture, an extract, an essence of the flowers, and a vinegar, are all prepared from it. The tincture is the common form of the application for wounds and bruises; it was first introduced by the homœopaths, but has now come into general use. It is a powerful preparation, and, having poisonous properties, should be kept with caution.

ARNIM, LUDWIG ACHIM VON, born Jan. 26, 1781, at Berlin, died Jan. 21, 1831. He was of

an old German noble family, whose name can be traced back into the 10th century, and was one of the founders of the romantic school in German literature. This school, now nearly extinct in its more respectable representatives, was a reaction against a certain intellectual, critical, and sceptical bias of the classical school in poetry, and of the critical philosophy of Kant, Fichte, and their cotemporaries. It strove to reestablish the ancient depth of feeling instead of the existing superficiality of judgment, the beautiful traditions of the middle ages instead of the modern levelling spirit, old fairy tales, magic secrets, mediæval sentiments and superstitions instead of the enlightenment of the century, indistinctness and boundless liberty of poetical forms and expressions instead of the classical severity and purity of style, and, in general, the rights of the heart and affections, and the infinite freedom of the individual against the monarchy of the intellect and reason. This school undoubtedly had its good qualities. The Swabian branch of it, represented by Uhland, Schwab, Kerner, Moericke, Pfizer, and others, has the eminent merit of enriching German poetry with the sweetest original lyrics. The northern branch, represented by Arnim, Tieck, the two Schlegels, La Motte Fouqué, and others, had a more transitory career. It served, however, to remind the literary world of the dangers of over-cultivation of the intellect, and of the almost forgotten treasures of ancient German and Teutonic popular poetry. Among the rubbish of this ancient literature, hundreds of pure gems of genuine poesy were exhumed from their graves, and brought to the appreciation of modern taste. Arnim was the most richly gifted among the northern Romanticists, but at the same time the most unpolished and formless. The more prominent of his writings are *Des Knaben Wunderhorn* (8 vols., 1806), *Wintergarten* (1809), *Halle und Jerusalem*, *Studentenspiel und Pilgerabenteuer* (1811), *Die Kronenwächter* (1817). His complete works were edited by W. Grimm, Berlin, 1839-'46.—ELIZABETH VON (Bettina), wife of the former, and sister of the poet Clemens Brentano, was born in Frankfort-on-the-Main in 1785. Her education in almost unrestrained liberty, her friendship with a canonesse, Fräulein Günderode, who committed suicide on account of an unhappy love for the philologist Creuzer, and her peculiarly sensitive nature, have made her one of the most celebrated and remarkable women of the age. Her two works, *Goethe's Briefwechsel mit einem Kinde* (8 vols., Berlin, 1835), translated into English by herself, a correspondence with Goethe, in which she courts the poet, at that time 60 years old, with a kind of Platonic, child-like, sometimes even affected love, while he patronizes her fancies with a reserved condescension; and *Die Gunderode* (2 vols., Berlin, 1840, partly translated by Margaret Fuller), a correspondence between herself and that lady, exhibit an almost intuitive insight into nature, an

idoltrous appreciation of its beauties, a rich lyrical sense, a fascinating, naive, childish feeling, a reflection sometimes profound, sometimes full of affectation, and a frank hatred of every thing established, tyrannical, and anti-liberal. Amiable even in her faults, which, with the exception of her wilful style, are the faults of her age in the excessive valuation of merely literary merits, and fascinating in personal intercourse, she made her house in Berlin for some time the great attraction of that metropolis, where the most complete liberty of opinion reigned, and under the name of "Bettina," even in her old age, assembled around herself the literary magnates of the day. She has since been active as a politico-social author, but without great success.

ARNO, a celebrated river of Tuscany, rises in Mount Falterone in the Apennines, 6 miles N. of Prato Vecchio, flows S. to Ponte a Buriano, thence N. W. to Pontassieve, where it receives the Sieve, then follows a westerly course through Florence and Pisa, to 7 miles below the latter city, where it flows into the Mediterranean, through a channel cut for it in 1603; length, 150 miles. It is navigable for small vessels from the sea to Florence, but further is liable to be obstructed by floods and droughts. To guard against the former, it has been embanked for the greater part of its course. The valley through which the Arno flows, between Florence and Pisa, is the very garden of Italy, and is famous for its beauty.

ARNOBIUS, an African rhetorician, born in the 8d century in Sioca Veneria (Keff), near Carthage. He was a pagan, and a violent opponent of Christianity (which had been introduced into Numidia as early as A. D. 250), until, tradition says, he was warned in a dream to embrace the new religion. There is some reason to doubt the tradition, and to ascribe his conversion to an independent and rational investigation of the doctrine of the gospels. On his conversion he applied to the bishop of Sioca for admission to the church. The bishop regarded him with distrust, and desired some proof of the sincerity of a man who had been so zealous a defender of paganism. Arnobius, therefore, wrote the famous treatise entitled *Adversus Gentes*, in which he gives proof of his sincerity, and zeal for Christianity, by exposing the follies and fallacies of his former faith. There has been much question among theologians and chronologists, as to when this work was written. Neander considers its allusions to circumstances proof that it was written later than A. D. 303. Theologians as greatly disagree on the general character of the work. Some discern in it the hand of a neophyte, who had no real apprehension of the faith he had espoused; while others see in it the marks of profound philosophical investigation, and find it discordant with the prevalent expositions of Christianity, only because it was conducted independently and without prejudice. The *Adversus Gentes* inclines to Gnosticism, and Dual-

ism, in the conclusion that, since the Supreme Being would not have created so imperfect a work as the human soul, it must have been created by some inferior and imperfect being and in his image. Following out these speculations, Arnobius taught that immortality was not an attribute of the soul, but could only be acquired by effort to conquer evil, and rise to the supremacy of good. The Gnostic tendency is also seen in his treatment of the character of Christ. The work of Arnobius is interesting in a historical light, as an indication of the views which an independent neophyte would get in that day of Christianity by the study of the gospels, combined with the prevalent influences which surrounded him in Christian Africa. It also yields much valuable information to the student of mythology.

ARNOLD, BENEDICT, an officer in the American revolution, and a traitor to the cause of his country, born at Norwich, Connecticut, Jan. 8, 1740, died at London, June 14, 1801. His parentage was respectable, his education such as the common schools of the time afforded, and he was destined, by his friends, for a mercantile life. Apprenticed to druggists, he twice left them, and enlisted in the army, from which he deserted not without great danger. His disposition was little fitted for trade, and among his companions he was always noted for reckless spirit and daring as well as unprincipled conduct. Having embarked in business at New Haven as a druggist, he united to this pursuit trade with the West India islands, and was the owner of several small vessels, sometimes sailing them in person. In this mercantile enterprise, he, at one period, failed under rather suspicious circumstances. When the war of independence began with the battle of Lexington, Arnold, who was the commander of a militia company styled the "governor's guards," at once abandoned trade, and with his troops marched for Cambridge, the headquarters of the Massachusetts committee of safety, and offered his services. They were accepted, he was commissioned as colonel, and, at his own instance, despatched on an expedition against Forts Ticonderoga and Crown Point, 2 very important posts held by the British troops. A party of "Green mountain boys," led by the famous Ethan Allen, had marched against Ticonderoga, and Arnold overtaking them, drew his commission from his pocket and attempted to take the command from Allen. Failing in this, he volunteered his services, and at the capture of the fort, marched into it by Allen's side. Shortly after this, he greatly distinguished himself by the seizure of St. John's, at the head of Lake Champlain, and with a small flotilla he annoyed the enemy in several other instances. But even at this early period he became involved in troubles of a pecuniary nature, which appeared to beset him during the whole of his military career, and in this instance with the Massachusetts committee of safety. They paid his drafts upon them with a reluctance indi-

eating suspicion of their worth. He now resigned in anger, but was very soon again engaged in an enterprise of much greater importance against the Canadas, and was appointed, in connection with Gen. Richard Montgomery, to the command of an expedition, whose object was the capture of Quebec. Arnold was well fitted for such a difficult enterprise, as his military genius was unquestionably equal, if not superior, to that of any other revolutionary officer. His forces embarked at Newburyport, and sailed for the Kennebec river, in Maine, leaving their vessels at a point near the present town of Gardiner. Thence their march lay through the wilderness toward Quebec, in the short and chilly days of autumn. In the face of continual dangers and obstacles, through pathless forests, over swollen and rapid rivers, suffering from cold, from hunger, from the treachery of guides, from the death and desertion of troops, Arnold held bravely on, cheering his men, conciliating the inhabitants, eluding the vigilance of the enemy. Not until Nov. 9 did he arrive on the banks of the St. Lawrence opposite to Quebec, having with him but 700 men. Joined by Montgomery, who had arrived by another route, the American forces attacked Quebec Dec. 31, 1775, but their numbers were too feeble to carry it by assault. Montgomery was killed before the city which he had assisted in taking under Wolfe's command, 16 years before. Arnold was very severely wounded in the leg. The enterprise against Quebec failed; Arnold retired to Montreal, where his fair fame was again sullied by dishonorable transactions connected with the traders of the place, whom he oppressed and despoiled. For this conduct he was much censured both before and after the retreat of the continental forces from Montreal, and it was doubtless the first important link in the chain of incidents which led to his final ruin. His gallant conduct, however, at the storming of Quebec, added to his skill and perseverance in forcing a march through the wilderness, won the approbation of congress and promotion to the rank of brigadier-general. Arnold could not remain idle, and he was appointed to the command of a small fleet on Lake Champlain, and Oct. 11, 1776, fought a desperate battle with a very superior force of the enemy. Arnold's flotilla consisted of but 16 little vessels; 8 schooners, 2 sloops, 3 galleys, and 8 gondolas. That of the enemy comprised 1 ship with 3 masts, 2 schooners, a radeau, 1 gondola, 20 gun boats, and 44 boats with provisions and troops. The action lasted from 12 until 5 o'clock, when the British drew off, and Arnold finding his forces too much crippled to attempt another battle, passed through the British line, at night, without discovery. The next morning, however, he was pursued, and the fight was renewed for 4 hours, with the utmost courage on Arnold's part, when, finding himself likely to be surrounded, he drove his galleys on shore, set fire to them with their

flags still flying, and was the last man to leave his vessels. He arrived safely with his men at Ticonderoga, and although not crowned with victory, his unflinching courage caused him to be regarded by his countrymen, as one of the first of American heroes. He was next stationed at Providence, the head-quarters of the eastern army, making preparations to attack the British, who had landed at Newport with large forces, and taken possession of the island. An attempt to dislodge them failed, from the inability of Arnold to raise troops in sufficient numbers to insure success. While engaged in this manner, the action of congress in creating 5 major-generals, all of them his juniors in rank, without naming him, caused him the most bitter mortification, and had great influence on his subsequent career. His brilliant exploits deserved reward, and it must be confessed that his treatment by congress in this instance was undeserved. From this moment he began to talk of the ingratitude of his country, and unprincipled as he was at all times, this incident led him to meditate revenge. Washington himself was much concerned at the course that congress adopted, and wrote a soothing letter to Arnold, entreating him not to resign or act hastily, as his merits would, sooner or later, be acknowledged. With this kind advice Arnold complied, but at length determined to visit head-quarters, and obtain permission to visit Philadelphia, and in person claim his full rank from congress. On his way from Providence through Connecticut, he fell in with Generals Silliman and Wooster, who had suddenly collected a body of 600 men, marching to meet the British force of 2,000 under Governor Tryon, who had landed near Fairfield, and was ravaging the country. In an engagement which ensued near Danbury, Arnold took part and greatly distinguished himself. He at one time had a horse shot under him, and a British soldier seeing that he was unhurt rushed forward to transfix him with his bayonet. Arnold sat still upon his fallen steed until the man came within range, when, drawing a pistol from his holsters, he shot him dead. Such cool bravery should at once have earned for him his just rank, but strange to say, congress, although it created him a major-general, still left him below the 5 others recently commissioned, and presented him with a richly caparisoned horse, a gift which did little to soothe his wounded feelings. He now took command, for a season, of the army gathered near Philadelphia, but always preferring active service was soon sent to join the northern army under command of Gates. In this capacity, he displayed his usual ability in an expedition to relieve Fort Stanwix, besieged by St. Leger, the British commander, with a large force of English, Canadians, and Indians. In the several battles of Bemis heights, Arnold bore a most distinguished part. In the first encounter, Sept. 19, 1777, he was prevented by Gates from assuming command nearly the whole day, while

Gates himself took no part in the strife. This conduct can only be explained by Gates's jealousy of Arnold. In the second battle, Oct. 7, he entered the field without Gates's permission, rushed into the thick of danger, and appeared almost beside himself. The day was closed by a brilliant manoeuvre, the enemy's works stormed, the Hessians driven from their encampment, while Arnold's horse was killed beneath him as he rode into the Sally port, and his own leg shattered by a ball. He was removed to Albany, where he was confined to a sick bed from his wounds all the winter, while congress at last did him justice and allowed him full rank. In June, 1778, a few days after the British had evacuated Philadelphia, Washington appointed Arnold to the command of that city, as the state of his wound would not permit him to resume active duty. Washington, although he could not respect Arnold's private character, was ever the first to acknowledge and defend his public ability. In Philadelphia, his evil genius again appeared to beset him with like troubles to those in which he was involved with the Massachusetts committee of safety and the merchants of Montreal. He governed with a high hand, and ill-disguised mercenary motives. He became hated, he was mobbed, charges were preferred against him by the council of Pennsylvania, after he had, for 7 or 8 months, been creating discontent and trouble by his conduct. The whole matter was laid before congress, and it was decided that as Arnold was a United States officer he should be subject to a court-martial by a military tribunal, but it was not until after he had resigned his command at Philadelphia, March 18, 1779, not, indeed, until Jan. 26, 1780, that the trial was concluded, it having occupied several weeks. Although acquitted of actual criminal intent, he was adjudged to be reprimanded by the commander-in-chief, and the sentence, though mildly administered, roused within him a spirit that thirsted for vengeance.—He had conducted, with much skill, his own defence before the court, and with every appearance of sincerity used the following words: "Conscious of my own innocence and the unworthy methods taken to injure me, I can with boldness say to my persecutors in general, that in the hour of danger, when the affairs of America wore a gloomy aspect, when our illustrious general was retreating through New Jersey with a handful of men, I did not propose to my associates basely to quit the general, and sacrifice the cause of my country to my personal safety by going over to the enemy and making my peace." It was subsequently discovered that at the very instant of this speech he had been for 8 months in secret plotting with the enemy.—And now the scene of his great treason opens! Hated by many persons, loved by none, stung to the quick in mind, desperate in fortune—for his debts, owing to his extravagance, had accumulated enormously—baffled in his attempt to obtain a large sum of money from the French minister, he seemed

to be driven to such a pitch of frenzy that he could perceive only misery and disgrace by further attachment to the cause of his country, while traitorous desertion promised security and wealth. Another event, while he was stationed at Philadelphia, probably had great influence. This was his second marriage, to Miss Margaret Shippen, daughter of Mr. Edward Shippen, who was afterward chief justice of Pennsylvania. At that time, however, the family, one of the most distinguished in the state, was strongly attached to the tory interest. Miss Shippen was a great favorite with the British officers, and, no doubt, produced some bias on his mind after her union with him. She is described as eminently beautiful in person and character, and, though unconsciously swaying him after his faith to his country had begun to waver, no proof that she knew of his nefarious purposes has ever attached to her.—Arnold had solicited Washington for the command of West Point, on the Hudson river. Although the commander-in-chief at first expressed much surprise that an officer of such active disposition, now that he had recovered from his wounds, should be content to remain in garrison, Arnold plausibly overcame his scruples, and Aug. 8, 1780, took command of the fortress and established his head-quarters at a house on the opposite bank to West Point, and a mile or two below. This house had belonged to Col. Beverley Robinson, who was the son of the former celebrated speaker of the house of burgesses of Virginia. He had been a friend of Washington in youth, but had joined the royal cause, and his property lying about West Point was confiscated by the state of New York. West Point was the strongest and most important post in the United States, considered as the American Gibraltar, and "the key of communication between the eastern and southern states," so that when Arnold had fully committed himself to the wickedness of treason he wished to deliver into the hands of the enemy a trust of such importance as would insure almost certain ruin to the colonial cause, and for himself a splendid remuneration.—The treasonable correspondence between Arnold and Sir Henry Clinton, the British commander-in-chief, had now been carried on for 18 months with entire secrecy, and in such a manner as to excite no suspicion in case letters should miscarry. They were written in disguised hands, Arnold using the signature of "Gustavus," and Maj. John André, who in fact corresponded for Sir Henry Clinton, signing as "John Anderson." One specimen of this correspondence will show its art and purport. Arnold, writing to André, 1780, a month before the treason was discovered, says (alluding to himself in the third person, and hoping soon for an interview), "You will be able to settle your commercial plan, I hope, agreeably to both parties. He is still of opinion that his first proposal is by no means unreasonable, and makes no doubt when he has a conference with you that you will close with it. He expects that

you will be fully authorized from your house, that the risks and profits of the copartnership may be clearly understood. A speculation might at this time be easily made, and to some advantage, with ready money." From information given to Sir Henry Clinton during the correspondence, and which proved perfectly correct, he finally discovered that the traitor was no less a personage than Gen. Arnold, who, a few days before obtaining West Point, apprised the British commander that he should soon be in service again, ready to surrender himself under circumstances which should confer the greatest benefit on the royal cause. The plot was now ripe, and Arnold only wished to have a personal interview with some one "of his own mensuration," in order that every point should be settled by debate which would have been impossible in correspondence. He fixed upon Major André, who was a friend and even correspondent of Mrs. Arnold, and from her he doubtless had a good idea of his character. André at first was very unwilling to undertake such risk, but finally yielded to the wishes of Sir Henry Clinton.—It was now necessary for Arnold to act with the greatest caution. He had determined, if possible, to bring André to head-quarters, and accordingly wrote to Col. Sheldon, commanding a troop of horse at Salem, Westchester co., that he expected a person to come out from New York with a flag, and if he did, to meet him at Dobb's Ferry, and thence give him an escort to head-quarters. He wrote André at the same time, who refused to comply with his request, but who, signing as "John Anderson," informed Col. Sheldon that on Sept. 11 he hoped to meet Mr. G. ("Gustavus") at Dobb's Ferry. Sheldon did not exactly understand this letter and sent it to head-quarters, saying that he would be unable to meet the flag, but hoped that Gen. Arnold himself could. Arnold at once replied, explaining André's mysterious letter in the most plausible manner, and adding that as he had business at Verplanck's Point he would continue down to Dobb's Ferry. He did so; but, from some unexplained reason, André and Beverley Robinson, now cognizant of the whole scheme, did not appear, and no meeting took place. While at the ferry he wrote to Washington, who was encamped with the main army at Tappan, meditating an attack on New York, that he came down the river to examine its defences and establish a line of signals. Another meeting was now appointed for Sept. 20, he informing André that he must assume disguise, and would be met by a trusty person on the east side of Dobb's Ferry. Meanwhile Clinton, tired of delay, sent the Vulture sloop-of-war up the Hudson as far as Teller's Point, with Beverley Robinson on board. Robinson, in order to inform Arnold of his presence, wrote him a letter asking an interview, ostensibly in regard to his West Point property, and another of the same purport to Gen. Putnam, pretending to think that he was then in the Highlands. These letters were openly despatched by a flag-boat to Verplanck's

Point, 6 miles above the Vulture's anchorage. That very day, Monday, Sept. 18, when a conference seemed so easy, new troubles sprang up in the path of the traitor. Washington, anxious to meet the count de Rochambeau at Hartford, came up, with his suite, to Verplanck's Point, a few hours after the reception of the letters, which Arnold, with cool audacity, showed to him, he having heard of the commander-in-chief's approach and come down from headquarters, with a show of respect, to meet him. Washington strongly advised Arnold not to see Robinson, saying that after all of Arnold's troubles a conference with a tory would be likely to injure him in the public estimation. He then, with his suite, of whom Lafayette was one, crossed the river in Arnold's barge, and, looking at the Vulture through his glass, he spoke in low tones to those about him, while Lafayette, in allusion to the interchange of news then common between West Point and New York, said: "You have a correspondence with the enemy, Gen. Arnold, and must find out what has become of Guichen"—Guichen being then looked for with a French squadron. Arnold was greatly confused, and afterward confessed that he thought the treason was discovered. He accompanied Washington as far as Peekskill, and the next day, returning to head-quarters, boldly wrote to Robinson, saying that the commander-in-chief would not permit a conference, and referred him to the civil power. But within this letter were two others, one again to Robinson saying that on the next night he would send a trusty person to Dobb's Ferry, or on board the Vulture, advising, also, that she should remain where she was. The other was a copy of his late one to André. All 8 were at once sent off from the ship to Sir Henry Clinton, who despatched Major André on the morning of the 20th to Dobb's Ferry, when, meeting no one, he pushed on and reached the Vulture at 7 o'clock the same evening. Before leaving New York, Clinton gave him the most positive instructions not to go within the American lines, not to change his dress, and above all not to take any papers. No boat came off to the Vulture as André had expected, and for good reason. Joshua H. Smith, living near the village of Haverstraw, a man of respectable family and of fair outside character, had been employed by Arnold and his predecessor at West Point, Gen. Howe, in gaining intelligence of the enemy. In this instance, Arnold had used him for his own purposes, and made him aware that he expected to hold a conference with a person on important civil business from New York. There is good reason to believe that Smith knew more of the plot than he ever professed to, although much obscurity rests on his share in the transaction. Smith was to go to the Vulture and bring "Mr. Anderson" on shore, but could get no boat, and at once despatched one of his farm hands to head-quarters. Arnold sent the man back with some simple message, and at once went down himself to Verplanck's Point, thence

despatched an officer in his own barge up to the "Continental Village," on a little creek some miles above, to bring down a boat, which he ordered the quartermaster at Stony Point to send into Haverstraw creek, near Smith's house. That night, Sept. 21, 1780, about 11 o'clock, Smith and 2 hands pulled with muffled oars to the Vulture; returning at a late hour with Major André, who, anxious to bring matters to a conclusion, determined to go on shore, in spite of Robinson's remonstrances. He wore his uniform coat, but over it a large blue sur-tout which completely hid his regimentals. He landed at the foot of Clove mountain, 6 miles below Stony Point, and Smith conducting him to Arnold, who was waiting among the bushes, left them alone together. It being near morning when he landed, the plotters had not sufficient time to conclude their conference, and at Arnold's instance André mounted a horse and they rode together to Smith's house. The challenge of a sentinel demanding the countersign, was the first intimation André had that he was within the American lines, and he was much alarmed,—and still more so when he heard a cannonade down the river and saw the Vulture fired upon from below Verplanck's Point, and obliged to drop down stream out of the reach of shot. After breakfast the plotters concluded their plans, and Arnold set off about 10 o'clock and returned to head-quarters; he never saw André more. What his reward was to have been had the scheme succeeded, has never come to light, but it was no doubt immense. The day was fixed for striking the great blow: the British troops were already embarked under the pretence of invading the Chesapeake, and the moment that Arnold knew they were on the move he was to give "an alarm," and draw the troops out of the garrison, and scatter his forces, while the enemy, by routes which had been fully agreed upon, should march at once into the several forts, meeting but little opposition. Now that André was within the American lines he found it necessary to leave off his uniform and assume disguise. Smith intimated his surprise that a person coming on civil business, should wear the dress of a British officer, and Arnold readily quieted his suspicions by informing him that "Mr. Anderson" was a man of such vanity, that he always wished to make a display, and in order to do so on this occasion had borrowed a coat of a military friend. Before parting from André he gave him a passport worded thus: "Head-quarters, Robinson's house, Sept. 22, 1780. Permit Mr. John Anderson to pass the guards to the White Plains, or below if he chooses, he being on public business by my direction. B. Arnold, M. Gen." He also gave him 6 other papers: 1. "Artillery orders, which had recently been published at West Point, giving directions how each corps should dispose of itself in case of an alarm;" this paper was of the utmost consequence, as it enabled an enemy to know the precise position of the garrison. 2.

"An estimate of the forces at West Point and its dependencies." 3. "An estimate of the number of men requisite to man the works." 4. "A return of the ordnance in the different forts, redoubts, and batteries." 5. "Remarks on the works at West Point, describing the condition of each, and its strength or weakness." 6. "A report of a council of war lately held at head-quarters, at Tappan," which Washington had sent to Arnold only a few days before, requesting his opinion on the subjects to which it referred. Thus almost in spite of himself André had violated the positive instructions of Sir Henry Clinton. He was captured the next day at Tarrytown, and delivered to Col. Jameson, at North Castle. With unaccountable stupidity, Jameson at once decided to send his prisoner to Arnold, writing him at the same time that papers of a dangerous tendency had been found upon him, which he had forwarded to Washington, at Hartford. Major Tallmadge, next in command to Jameson, returning to North Castle in the evening from duty near White Plains, was astonished at his superior officer's blindness, and induced him to order André back, although Jameson would insist on his letter to Arnold going on. That same day Washington returning from Hartford to Robinson's house, met the French minister, M. de Luzerne, at Fishkill, the minister being on his way to Newport. He induced Washington to stop for the night, and the next morning on nearing Arnold's head-quarters, the commander-in-chief sent forward 2 aids to say that he would soon arrive, but must ride down by the river's bank with Generals Knox and La Fayette, to examine some redoubts. General, and Mrs. Arnold, who with her infant child had come from Philadelphia but 10 days before, in company with the aids sat down to breakfast. A messenger came in express bearing Jameson's letter announcing the capture of "Anderson." Startled, but with wonderful presence of mind, Arnold told the aids that he was suddenly called over to West Point, and would soon return to meet Washington. Then summoning his wife to her chamber he said that they must instantly part, perhaps never to meet again, for he must flee at once to the enemy. She swooned upon the floor, and he left her in convulsions. He hurried to the door, mounted the messenger's horse, dashed to the river's bank, and finding his 6-oared barge in waiting, ordered the men at once to row down the river with all their strength, and he would reward them well. They bent to their oars, and as they pulled through King's ferry, Arnold showed a white handkerchief, which at Verplanck's Point caused the boat to be mistaken for a flag. He reached the Vulture in safety, and to complete his iniquity turned on the boatmen and "rewarded" them by saying that they were prisoners of war. As soon as Sir Henry Clinton heard of this meanness, he set them all at liberty.—A few hours after his escape he wrote to Washington, chiefly in regard to Mrs. Arnold; but, alluding to his

desertion, he spoke of the attachment he still held for his country, and of "a heart conscious of its own rectitude." Meanwhile Washington suspecting nothing, came to the house after Arnold's flight, breakfasted hastily, and went over to West Point to meet him. No preparations for a salute were visible, and he was much surprised to learn that Arnold was not there. He returned, after examining the various defences, about 4 o'clock, P. M., and was met by Col. Alexander Hamilton, who was anxiously awaiting him, Mrs. Arnold being frantic with grief and terror. The despatches from Jameson had been faithfully cared for, and the messenger learning on the road that he had left Hartford, turned back and came direct to Robinson's house. He said the papers he bore were of the utmost consequence, and Hamilton opened the packet. The whole plot was revealed, but too late to prevent the escape of the traitor, through the stupidity of Lieut. Col. Jameson.—The subsequent career of Arnold may be told in a few words. He joined the British army and took part in an expedition against Virginia, and afterward against New London, in Connecticut. In the latter instance he is said to have witnessed, from a church steeple, the burning of New London, with fiendish cruelty watching this destruction almost in sight of his native home. After the surrender of Cornwallis, at Yorktown, he went to England, but was only partially rewarded for his treachery by the payment of £6,800. His position was humiliating, for nearly every one avoided him with disgust and horror, and he was repeatedly insulted. At one time he engaged in business at St. John's, New Brunswick, and at Point Pitre, Gadeloupe, but returned to England where he sunk into utter obscurity. His wife died in London, in 1796. He left several children. For a full account of Arnold's treason see Sparks's "American Biography," and Washington Irving's "Life of Washington."—JAMES ROBERTSON, 2d son of the preceding, born in the United States in 1780, the same year in which his father disgraced himself by betraying his country, died in London, Dec. 27, 1854. In 1798 he entered the British army as 2d lieutenant, and, after having taken an active part in the blockade of Malta and the Egyptian campaign, he was gradually promoted to the rank of lieutenant-colonel. Subsequently he served in the West Indies, Bermuda, and North America. While engaged in the attack of Surinam he displayed great courage, and was severely wounded, on which occasion he was presented with a valuable sword by the patriotic fund. After his return to England he was for some time attached to William IV. as aide-de-camp. He was promoted to the rank of colonel in 1837, of major-general in 1841, and of lieutenant-general in 1851.

ARNOLD of BRESCIA, one of the most noted of reformers before the Protestant reformation. The year of his birth, early in the 13th century, the names and rank of his parents, are

all unknown. He first appears in history as a scholar of the French rationalist Abelard, and from the first was distinguished among his fellows by a finished and most persuasive eloquence. Returning after a time to Italy, the land of his nativity, he found scope for his peculiar gift in contending with the wide corruption which prevailed in all parts of the ecclesiastical administration. He attacked with vigor the luxury, the venality, the indifference to religious duties, and the degrading worldliness of the clergy against which the authorities of the church presented no effectual resistance. The special doctrine which he maintained was the antagonism of the church to the world. He held that the same man ought not to hold secular and religious office, or to take care at the same time of property and of souls. This doctrine (which was only the application of the ground principle of the monastic life to the general affairs of the church), urged by the wit, the vehemence, and the persuasive voice of so devoted an advocate, speedily made for him a party, which was joined by men of influence as well as by the masses. Disturbances broke out, the clergy protested, the bishop of Brescia became alarmed, a complaint was sent to Rome, and at the council of the Lateran in 1189, Arnold was condemned as a disturber of the peace, forbidden to preach, and banished from Italy. His party, however, was not annihilated, nor his influence destroyed. In France, where he went to visit Abelard, whose name had been joined with his in the sentence of condemnation, and in Switzerland, where he preached for some years, he gained many adherents. Meanwhile, a bold application of his principles had been attempted in Rome itself. The demands of the papal see excited a republican movement, and a secular president was appointed to govern the state, while the pope was restricted to the exercise of spiritual authority. This change in the national government being negatived in the sacred chamber, a revolt broke out, and the pope was forced to leave the city. Summoned back by a call which he could not disobey, Arnold assumed the direction of the movement, and for a time his influence seemed likely to restore to the Romans their ancient freedom in connection with order. But the license of rioters hindered his plans, reaction came, one by one his reforms were nullified, and the unfortunate murder of a cardinal in the street enabled the English pope Adrian to turn against this alleged disturber of the peace, and enemy of the church, the sympathies of the fickle populace. Arnold and his friends were driven ignominiously from the city in which they had so strenuously labored. Some of them returned to Tuscany, where they celebrated the virtues and the heroism of the suffering "prophet." Arnold himself sought refuge with some noblemen of the country, but the demand of the pope for his surrender, enforced by the threatening of the emperor Barbarossa, frightened his protectors

into compliance, and Arnold was sent to execution. He was hanged, or, as some say, crucified on the Piazza del Popolo, his corpse was burned, and his ashes thrown into the Tiber, to hinder, as the historian Otto of Freisingen remarks, "the stupid people from worshipping his relics." This event took place in the year 1155.—Arnold's importance in history consists in the fact that he was the first to proclaim and organize a revolt against that claim of Rome which Hildebrand had secured to the church. He was not a heretic in doctrine, nor had he any share in the philosophical and scholastic revolution inaugurated by his master Abelard. He was rather what Baronius calls him, "the patriarch of political heretics." His private life was above reproach, and his enemies regretted that so good a man should do so bad a work, that a practice so pure should accompany a doctrine so pernicious. His charm of person was such as to win to him men of differing opinions, and fit him eminently to be leader of a party. His strength and his weakness were both found in the single idea which he seemed to represent, and the single cause to which he gave himself, the separation of church and state. His doctrine was, however, in advance of his age, and could find its full expression and power only after many centuries.

ARNOLD, CHRISTOPH, a German astronomer, born at Sommerfeld, near Leipzig, Dec. 17, 1650, died April 15, 1695. He was a simple farmer, who devoted his hours of leisure to the observation of the stars. He erected an observatory at his own house, and entered into correspondence with the most learned savants of his time. He was the first to call the attention of the astronomers of Leipzig to the comets of 1683 and '86. He also acquired great fame by his observation of the passage of Mercury across the sun's disk, Oct. 31, 1690. The town council of Leipzig gave him a present of money and exempted him from all city taxation for life. The astronomer Schröter has bestowed the name of Arnold on 8 valleys in the moon.

ARNOLD, GEORG DANIEL, a writer in the Alsatian dialect, born at Strasbourg, Feb. 18, 1780, and died 1829. In 1806 Arnold was made professor of civil law at Coblenz. His *Pfingst-montag* (Whit-Monday) is a comedy in the Alsatian dialect. Goethe, in his *Kunst und Alterthum*, speaks in high terms of its truthfulness and artistic power.

ARNOLD, GOTTFRIED, a Lutheran theologian, and historiographer of king Frederic I. of Prussia, born at Annaberg in Saxony Sept. 5, 1665, and died of fright on seeing Prussian recruiting officers enter his church while he was preaching, May 20, 1714.

ARNOLD, JOHANN, a Prussian miller, whose name acquired some importance in Prussia, from its connection with a law case, which gave an opportunity to Frederic II. to display a certain despotic sense of justice. Arnold had to pay an annual rent for the land and water which he

required to carry on his business, when the owner laid out a new pond which absorbed all the water, and the supplies for the mill were cut off. Yet when the rent day came, not the least allowance was made by the landlord. He insisted upon the money, and as the miller had not got it, the mill was seized, and the poor fellow who had a large family was left to starve. The miller brought his case before the king, who put it into the hands of one of his superior officers, and on a decision in favor of the landlord the king ordered the arrest of all the judicial parties connected with the case. However, when the matter was brought before the highest court of appeal, the judgment of the lower court was confirmed, and the judgment passed by the officer of the king became invalid. But the king took no notice of the decision of the courts. The 6 magistrates who had pronounced in favor of the landlord were dismissed, held in durance for a year, and in conjunction with the landlord were condemned to pay damages to the miller. The governor of the district, under whose eyes the case was allowed to pass, was also dismissed. Public sympathy was excited in behalf of the magistrates, and after Frederic's death they were reinstated in their position.

ARNOLD, JOHN, the inventor of the expansion balance, and of other improvements in the mechanism of chronometers, born in Cornwall, England, in 1744, died Aug. 25, 1799. At first an itinerant repairer of clocks, his talent at length recommended him to the notice and patronage of George III., and after a series of experiments he succeeded in making such superior chronometers, that those of his manufacture were commonly selected by the East India company. They were so accurate, that the board of longitude allowed him several premiums for them.

ARNOLD, LEWELL H., governor of Rhode Island in 1831 and 1832, born at St. Johnsbury, Vt., Jan. 29, 1792, died at Kingston, R. I., June 27, 1852. He graduated at Dartmouth college in 1811, studied law with James Burrill, and after practising his profession for a time, engaged in manufacturing. After holding the office of governor, he sat as a representative in congress, from 1845 to 1847. His father was a member of the continental congress.

ARNOLD, MATTHEW, son of Thomas Arnold, born Dec. 24, 1822, at Laleham. He was educated at Winchester, Rugby, and Oxford; won the Newdigate prize for English verse by a poem entitled *Oromwell*; in 1845 was chosen fellow of Oriel college; from 1847-'51 was private secretary to Lord Lansdowne. Having married, Mr. Arnold received an appointment as one of the lay inspectors of schools under the committee of the council of education. In 1849 he published, anonymously, a small volume of poems under the title "The Strayed Reveller and other Poems." In 1852 a second volume appeared, "Empedocles on *Ætna*, and other Poems." In 1853 a new volume was issued in his own name, followed by a second series, the

two containing such poems in the previous collections as the author wished the public to preserve, along with some fresh pieces. The introduction to the American edition (Boston, 1856), sets forth Mr. Arnold's theory of the poetic art, the peculiarity of which is expressed in a brief extract: "In the sincere endeavor to learn and practise, amid the bewildering confusion of our times, what is sound and true in poetical art, I seemed to myself to find the only sure guidance, the only solid footing among the ancients." Following this principle, the poet carefully selects a theme that is removed by distance from the passing of the present time, and treats it in a calm and elevated style, deeply thoughtful, reflective, and highly finished, not wanting in subdued and tender feeling, but distinguished more for intellectual ripeness and richness, purity of tone, and severity of taste. His cast of mind is contemplative, and he is a thorough scholar in classic and romantic lore. But the descriptive passages in his volume indicate a genial sympathy with nature, and a delicacy of handling that is very rare. On May 5, 1857, Mr. Arnold was elected professor of poetry, at the university of Oxford, in the room of the Rev. Thomas Legh Cloughton, whose term of office had expired. He was opposed by the Rev. John Ernest Bode, also a distinguished member of the university, and, after an unusually spirited contest, was elected by a considerable majority. The office, held for 10 years, is one of greater honor than emolument.

ARNOLD, DR. SAMUEL, an English writer of music, born in London in 1789, died Oct. 23, 1802. At the age of 21 he became composer to Covent Garden theatre, a post which he held, with occasional intervals, during the greater part of his life. He published no less than 47 operas, of which "The Maid of the Mill" was for many years a favorite on the stage. "The Prodigal Son," an oratorio, also had remarkable success. About the year 1786 he produced 4 volumes of cathedral music, which have always been held in high esteem, and are still a standard work. His published works, beside those enumerated, were very numerous.

ARNOLD, THOMAS, D. D., born at Cowes, Isle of Wight, June 18, 1795, died at Rugby, June 12, 1842. His father, William Arnold, was collector of customs at that place. No incidents render his life remarkable. It was the life of a staid, thoughtful, earnest, and Christian man. When 8 years old he was sent to Westminster, and at 12 to Winchester college, where he was known as an indolent, shy, and restless boy. In 1811, having obtained a scholarship at Corpus Christi, he removed to Oxford. Here he showed a fondness for history and poetry, and gave much time to the study of ancient historians and philosophers, especially of Aristotle and Thucydides. At this period of his life he was addicted to dissonance. He was eager in argument, fearless in taking and firm in defending his positions, with liberal tendencies,

and strong convictions, but withal very generous, high-toned, and affectionate. In 1814 he took a first class degree, and the year after was elected fellow of Oriel college. In 1815 and 1817 he was chancellor's prizeman for the Latin and English essays. His mind had been troubled with religious doubts, but these were completely overcome, and in 1818 he was ordained deacon, in 1828 priest, and assumed the office of chaplain at Rugby school. In 1820 he married Mary, the youngest daughter of Rev. J. Penrose, rector of Fledborough, Nottinghamshire, and resided at Laleham, near Staines, where he had settled the year before, and employed himself in the preparation of young men for the universities. In this quiet retreat, under the influence of domestic ties, and the cares of a responsible office, his character underwent a decided change. His views of life became fixed and serious, his purposes earnest, his aims decisive and lofty. From this point his career seems to have fairly commenced. So well known was he, that on his application for the post of head master of Rugby school, he was elected, though others had applied before him, the trustees being assured that "he would change the face of education all through the public schools of England." He entered upon the duties of this office in August, 1828, and devoted to it all his powers of mind and character with an effect that more than satisfied the expectations of his friends. His peculiar gifts as an instructor, and the singular force of his personal qualities, raised the Rugby school to a position of great eminence, and elevated the intellectual and moral standard of similar institutions in other parts of England. Dr. Arnold enlarged the basis of education at Rugby by adding to the classics other departments of learning; but his influence was chiefly felt in the practical bearing upon life and character which he gave to all education, and in the lofty Christian spirit which he endeavored to impart to his scholars. For the sake of moral government, he substituted for the old system of flogging, a responsible supervision of the younger lads by the boys in the highest class—a plan that was criticized in some quarters, but which he defended in the "Journal of Education," 1834-'5. Fourteen years, the last years of his life, Dr. Arnold spent in this congenial occupation, dignifying the office of teacher, and, arduous as his duties were, finding leisure to bestow his attention upon other matters of private and public interest. His literary labors were not suspended. Into the political and religious questions of the day he entered with zeal. He was a strenuous opponent of the new school at Oxford. He took part in the debate upon church and state, wrote a pamphlet in 1838, upon "Church Reform," and later, "Fragments upon the Church," in which he contended earnestly against the advocates of the state church theory, opposed the legal establishment of a sectarian religion, and urged that church and state, instead of being formal-

ly united as two separate interests, should rather be identified, the state being in fact the working church, applying through its laws and institutions the principles of a vital Christianity to the world of human life. This idea of the essential harmony, and the necessary coöperation of man's spiritual, moral, intellectual, and practical powers, was a favorite one with Dr. Arnold—a thought which influenced his private career, was effective in making the Rugby school what it became, and left its mark upon his broader speculations. He wished to make religion a life, and life a religion. In 1835 he accepted a fellowship in the senate of the new London university; and having convinced himself that an acquaintance with the Scriptures was indispensable to the students; and that an examination in the New Testament might be prescribed without injury to the broad Christian character of the university, he proposed and carried a resolution: "That, as a general rule, the candidates for the degree of bachelor of arts shall pass an examination, either in one of the 4 Gospels, or the Acts of the Apostles, in the original Greek, and also in Scripture history." When at a larger meeting, in Feb. 1838, the senate of the university of London rescinded this resolution, and substituted for it the resolve: "That an examination in the text of the Old and New Testaments be instituted, but at the same time be made voluntary with the candidates," Dr. Arnold, not considering such voluntary examination satisfactory, withdrew from the senate of the university.—For several years he had been also much interested in the condition of the working classes; he delivered lectures before the Rugby Mechanics' institute, started a periodical in 1831 called the "Englishman's Register," of which only a few numbers were published, and wrote letters for the "Sheffield Courant," and the "Herts Reformer." Dr. Arnold declined accepting any political preferment from the whigs, with whom his views were mainly in sympathy. He loved academic life. And when Lord Melbourne appointed him to the Regius professorship of modern history at Oxford, he welcomed it as the post of all others for himself. But a single year was all that was allowed him in it. He gave his inaugural address, and a course of introductory lectures, and was laying out plans for wide usefulness, when he was seized with a violent spasm at the heart, and died in the 47th year of his age. His great work, the "History of Rome," in 8 vols., carried the narrative to the end of the second Punic war; a fourth volume embraced his contributions to the "Encyclopædia Metropolitana," extending the history to the time of Trajan. We have from him beside, an edition of Thucydides with notes, a course of lectures on modern history, 5 volumes of sermons, a volume of miscellaneous writings, and 2 volumes of very interesting correspondence, edited by Rev. A. P. Stanley, who published with them a memoir of Dr. Arnold.

ARNOLD, THOMAS KERCHER, a clergyman of the English church, and author of several series of text-books for schools, born in 1800, died March 9, 1858. He was educated at Trinity college, Cambridge, and in 1838 published the first of a numerous list of introductory books for the study of the Greek, Latin, Hebrew, German, French, and Italian languages. These works were extensively used in the schools of England, and have been republished in America, and generally introduced into American schools. He next prepared a series of school classics, combining portions of the best Greek and Latin authors; and the full classical series of Mr. Arnold covers the entire ground from first lessons to accomplished scholarship. In addition to these labors, he was an occasional writer on religious and ecclesiastical questions, and published a volume of sermons. He died suddenly of bronchitis.

ARNOLD, W. D., a son of Thomas and a brother of Matthew Arnold. He is an officer in the British army, and has written a novel of much promise, called "Oakfield, or Fellowship in the East." Its aim is to represent the trials of a young officer who is determined to act up to Christian principles in a British regiment stationed in India. The work is auto-biographical, in the same indirect way with Dickens's "David Copperfield" and Byron's "Childe Harold."

ARNOLDI, WILHELM, bishop of Treves, born in 1798; in 1844 produced a great commotion in Germany by reviving the obsolete pilgrimage in connection with the holy coat of Treves. One million and a half of German Catholics made the pilgrimage in obedience to his call, and the scenes of tumult and excitement which the ancient city of Treves presented on this occasion, baffle description. The indignation felt by the Protestants was shared by some of the Catholics. Ronge, a liberal Catholic priest, expressed these sentiments in a bold letter addressed to the bishop and published in the *Sächsischen Vaterlandsblätter*. The excitement which followed in the religious world was even greater than that which prevailed in the streets of Treves. Ronge's letter fell like a bomb-shell into the camp of the bishop, and eventually led to the secession of Ronge's German Catholic party from the Roman church.

ARNOTT, ARCHIBALD, physician, born in 1771, died at Kirkconnell Hall, in Scotland, his patrimonial property, July 6, 1856. He entered the army, on the medical staff, and served in Egypt, Italy, Spain, Portugal, Holland, St. Helena, and India,—for the greater part of the time as surgeon of the 20th foot. That regiment was in St. Helena while Napoleon Bonaparte resided there, and, in August, 1819, when the illustrious exile required medical aid, Dr. Arnott made an offer of his professional services, which Bonaparte then refused to accept. In April, 1821—5 weeks before the closing scene—he was admitted, and appears to have speedily

won his patient's confidence and regard by kindness, tact, delicate attentions, and medical skill. When Napoleon was dying, he desired that one of his gold snuff-boxes (the other he bequeathed to Lady Holland) should be brought to him, and, having with his weak hand scratched the initial "N" upon the lid with a penknife, begged Dr. Arnott to accept it in acknowledgment of his kind services. He also bequeathed him 600 napoleons, to which the British government added £500. Napoleon died, his right hand in that of Dr. Arnott. In 1822 appeared an interesting "Account of the Last Illness, Disease, and Post-mortem Appearance of Napoleon Bonaparte," from Dr. Arnott's pen. His memory was stored with anecdotes and traits of Napoleon, which he readily poured out in conversation. His opinion of Sir Hudson Lowe, thus expressed, was very unfavorable. In 1826 he retired from active service, returning to his native place, where his impartiality as a magistrate and his kindness as a landlord combined to make him popular and beloved.

ARNOTT, NEIL, a Scotch physician and popular writer upon science, born near Montrose, on the east coast of Scotland, in 1788. He was sent in 1797 to the grammar school at Aberdeen, where he took the first prize at the annual examination, and was a successful competitor for a scholarship. Lord Byron was his schoolmate at Aberdeen. In 1801 he went to the university, and, having selected the medical profession, devoted himself particularly to the study of natural philosophy. He completed his medical education in London, and through the influence of his instructor, Sir Everard Home, was appointed to the post of surgeon in the naval service of the East India company. The position gave him opportunity for scientific observations in different parts of the world, and he derived from it many of the striking facts with which he illustrated his later works. In 1811 he became a medical practitioner in London, but continued his scientific investigations. He was associated with the most learned strangers who visited London, and in 1815 was made physician to the French and Spanish embassies there. He published in 1827 his "Elements of Physics, or Natural Philosophy, General and Medical, explained in plain or non-technical language." This contained the substance of lectures which he had previously delivered, and was a most successful attempt to illustrate scientific principles in the language of common life. It was republished in different languages, and passed through 5 editions in England within 6 years. The work contained the result of his studies and practice, and was effectually designed, by revealing the laws of life and explaining according to these laws the newest physical inventions and appliances, to add to the health and convenience of men. In 1835 Dr. Arnott was appointed one of the senators of the university of London; in 1837 one of the physicians extraordinary to the

queen, and in 1838 a fellow of the royal society. He published at the same time his "Essay on Warming and Ventilating," in which he showed how much the public health depends upon the right management of the great physical influences, heat and a pure air, and described some prevalent abuses. He continued his researches and publications, and has been the author of numerous contrivances for health and comfort, such as the stove and ventilator to which his name is given, and the water-bed or floating mattress which has often been used with the happiest results. In 1854 he was requested by the president of the general board of health to become one of his council, and received from the royal society their Rumford medal; and in 1855 the jurors of the universal exhibition at Paris awarded him a gold medal, to which the emperor added the cross of the legion of honor. He has since retired from active practice, and is preparing for the press a new and enlarged edition of the "Elements of Physics."

ARNOULT, MADELEINE SOPHIE, a French actress of the last century, was born at Paris, Feb. 14, 1744, in the apartment in which Admiral Coligni had been murdered, more than a century and a half before, and died in 1802. The tragic associations connected with her birthplace seem, however, to have had no influence upon her career, which was brilliant and successful. Her father, an innkeeper, gave her a good education, in addition to which she possessed a charming face and figure, a voice of great flexibility and compass, a warm heart, and an unusual share of wit. Accident alone led to her adoption of a profession for which she was not educated, and the publicity attending which was at first exceedingly distasteful to her parents. Some ladies attached to the court of Louis XV. having heard her sing at evening mass during Passion week, were so struck by her fine voice that they induced the royal chapel master to employ her in the choir. Here she was not long in attracting the attention of Madame de Pompadour, who exclaimed at once that she had the talents to make a princess. Her debut upon the stage at the early age of 18 soon followed, and for 21 years, between 1757 and 1778, she was the reigning favorite at the French opera, taking the chief parts in the works of Rameau, Gluck, and the other prominent composers of the day. Her beauty, vivacity, and generosity, rendered her not less attractive than her voice and fine dramatic powers; and such men as Diderot, D'Alembert, Helvetius, Mably, Ducloux, and Rousseau, sought her society. The most eminent poets celebrated her charms in verse, and, in the exaggerated language of the time, she was compared to Ninon de l'Enclos, to Aspasia, and almost every other beauty of ancient or modern renown. Notwithstanding the severity of her wit, which was frequently exercised, she made no enemies, and exacted from her contemporaries a willing admission of her lyric and dramatic supremacy. Her *bons mots*, of which many

have been collected, are brilliant and pointed, and her tendency to indulge in them, regardless of place or occasion, is forcibly illustrated in her last moments, when she exclaimed to the priest in attendance, *Je suis comme Sainte Madeleine; il me sera beaucoup pardonné, parce que j'ai beaucoup aimé*. At the commencement of the revolution she retired to a country house at Luzarches, which had formerly been a parsonage, and over the door of which she inscribed the words, *Its missa est*, where she seems to have passed the rest of her days. One of her sons, a colonel of cuirassiers, was killed at the battle of Wagram.

ARNSBERG, or ARNSBERG, a town of Prussia, duchy of Westphalia, capital of an administrative division of the same name, and once the capital of the whole duchy of Westphalia. It is situated on a hill partly encircled by the Rhine. It is divided into the old and new town, and has a flourishing agricultural school and gymnasium. In the middle ages it was one of the principal seats of the Vehm court, which exercised a powerful influence throughout Germany. Pop. 4,000. The province, the division of Arnsberg, has an area of 2,250 square miles. It was transferred to Prussia from Hesse-Darmstadt in 1818. Pop. 462,082.

ARNULPH, bishop of Rochester in the reign of Henry I., was a native of France, born 1040, died in March, 1124. He left the French monastery where he lived on account of the immorality of his companions, and came to England, where he was successively prior of the monastery of Canterbury, abbot of Peterborough, and bishop of Rochester. He wrote, in Latin, a history of the church of Rochester.

AROLSEN, a town of West Germany, capital of the principality of Waldeck, on the Aar. Population, 2,050. It has a fine castle, the residence of the reigning prince, with a large library and valuable paintings, and several manufactories of woollen goods.

AROMA (Gr. *aroma*, pleasant perfume), the principle in plants or other substances which constitutes their fragrance. In some plants this resides in a volatile oil, but in others the portion containing this principle cannot be detected. It is of an extremely subtle nature, filling the air of rooms, or even the whole atmosphere around gardens; and though constantly imparted, as it may be, for instance, in the case of musk, for years, so as constantly to fill the air of a well-ventilated room, yet never causing to the substance from which it comes any diminution of weight. The aroma of plants is imparted to oils by maceration, but not to water.

AROMATARI, GRUSZKIN, an Italian physician, born at Assisi, in the duchy of Spoleto, in 1586, died in 1660, practised his profession for 50 years in Venice, and achieved such a reputation, that James II. of England, the duke of Mantua, and Pope Urban VIII., made him the most tempting offers to enter their service, which he however declined, as he preferred his

independence at Venice. Beside some essays on medical subjects, he wrote an interesting paper on the character of Petrarch, his favorite poet. One of his most important works is his letter to Bartolomeo Nanti, *De Generatione plantarum ex seminibus*. Its leading ideas on the analogy between the seeds of plants and the eggs of animals, were fully adopted and developed by Harvey.

AROMATIC. These are substances—plants, drugs, or medicines—which emit agreeable odors, and are usually characterized by a warm pungent taste. Such are the spices: cinnamon, ginger, pepper, balsams, frankincense, &c. They generally contain a peculiar volatile oil, mixed with resinous substances. The animal kingdom furnishes some aromatics, as ambergris, musk, civets, and castor. Aromatics are employed in the manufacture of perfumery, as condiments, and as exciting or antispasmodic remedies in medicine.

AROOAT, or EL AROOAT, capital of a state of the same name in the Sahara, North Africa, 800 miles from the sea-coast, lat. 38° 48' N. long. 1° 38' E. It is built on the sides of a hill, at the base of which flows the Wady-Mzi, and is surrounded by a rude mud and stone wall.

AROOSTOOK, a county constituting the N. E. extremity of Maine. Area, 4,950 square miles. Population, 12,529. Organized in 1839. Capital, Houlton. The surface is undulating, with occasionally a mountain peak, the loftiest of which are Chase's Mount and Mars Hill. Where it has been tilled the soil is good, but the greater part of the country is still clothed with the primeval forest. The St. John's river, which forms its northern boundary, is navigable for vessels of 50 tons burden. It is also watered by the Aroostook, and a number of smaller rivers. In 1850 this county produced 10,675 bushels of wheat, 201,687 of oats, 191,541 of potatoes, 17,814 tons of hay, and 186,691 lbs. of butter. There were 18 lumber establishments, 5 grist mills, 8 saw and planing mills, 18 shingle mills, and 2 tanneries. It contained in that year 8 churches, 2,021 pupils attending public schools, and 129 attending academies or other schools.

ARPAD, the Magyar national hero, son of Almos who led the Magyars into Hungary, flourished in the latter part of the 9th century, died in 907. He continued the work of his father, conquered Transylvania, Croatia, and Slavonia, and kept up wars, especially with the Bulgarians and Moravians, occasionally seizing a piece of territory on every hand, and supporting the expenses of his government by predatory excursions against Italy and the Slavonic tribes on the west. He was finally defeated by the Moravians in 906, on his return from a plundering expedition in Saxony. His history is preserved in the popular songs and traditions of his people, combined naturally with much that is fabulous. His dynasty ended with Andrew III., in 1301.

ARPEGGIO, a musical term, literally signi-

fying harp-like, in the manner of a harp, used to denote the striking of the notes of a chord in repeated succession, in imitation of the harp.

ARPENT, the old French name for acre, still used by the French of Lower Canada. At the present day land is measured in France by ares or hectares.

ARPINO, GIUSEPPE CESARI D', an Italian painter, born at the castle of Arpino, in the kingdom of Naples, in 1560, of obscure parents, died at Rome in 1640. While employed in a menial capacity by some artists who were at work in the Vatican, he accidentally discovered such an aptitude for drawing figures, that he attracted the attention of Pope Gregory XIII. He was placed with good masters, and eventually became a successful painter. His pictures show great facility and invention, correct drawing, and an apparent grandeur of style, but are at the same time artificial, and lack the simplicity and dignity of the old masters. He enjoyed the patronage of Pope Clement VIII., the successor of Gregory XIII., and founded a very successful academy at Rome. His character was disfigured by selfish traits and envy of his brother artists, whose works he studiously depreciated.

ARQUA, or ARQUATO, a village of northern Italy, 12 miles S. W. of Padua. It is famous as the place of the house and tomb of Petrarch. He died here at his villa in July, 1374, and was laid in a sarcophagus of red marble, raised on 4 pilasters, on an elevated base.

ARQUEBUSE, sometimes, but incorrectly, written *harquebuse*, from the French *arquebuse*, and corrupted in English, particularly on the Scottish borders, into *hagbut*, or *hackbut*—the earliest form of the musket, which became really serviceable in the field for military purposes. So long ago as the battle of Bosworth, A. D. 1485, it was introduced under the name of a hand-gun, which was nothing more than a short iron cylinder closed with a *quasi*-breech at one end, and provided with a touch-hole, fastened to the end of a stout wooden pole, like the handle of a spear or halberd. This hand-gun or miniature cannon was loaded with slugs or small bullets upon a charge of coarse powder, and was discharged by means of a match applied to the vent, the instrument being supported on the shoulder of the front rank man, who was a pikeman or halberdier, and directed by means of the handle, and fired, though of course without any aim, by the rear rank. Even earlier than this, at the battle of Agincourt, according to Hall's chronicle, the Britons were armed "with fiery hand-guns." So clumsy, however, and slow of operation were these antique firearms, that, in spite of their formidable sound and unaccustomed appearance, they produced little or no effect. In the reign of Henry VIII., although during its earlier years, the battle of Pavia was won by the fire of the Spanish arquebusiers, the longbow still held its own as the superior weapon, in virtue of its accuracy of aim, its range, and penetration;

and even in the reign of Elizabeth, the longbow is spoken of as "the queen of weapons," although she had musketeers in her army, and assisted Henry IV., of France, with a body of horse arquebusiers, commanded by Col. James, an ancestor of the well-known novelist. During her reign, this arm was greatly improved, although it was still so long and cumbersome that it could only be fired from a forked rest planted in the earth before the marksman, that indispensable instrument being sometimes furnished with a pike or halberd-head, so as, when set obliquely in the ground, to serve as a palisade. The barrels of these old pieces are extremely long, of very thick metal, usually small-bored, and sometimes, already, rifled; as is the case with the piece still preserved at Hamilton palace, in Scotland, with which the regent Murray was shot by Hamilton of Bothwellhaugh, in the year 1570. They were fired by means of a coil of match, or wick, of prepared hemp, passed through a hammer, like that of a modern firelock, which, being released by the pulling of the trigger, threw down the lighted match into the pan, and discharged the piece. In due time the matchlock gave way to the wheel-lock, in which the flint was fixed so as to be stationary, over the pan, and a toothed wheel, by means of a spring, was set in rapid motion against its edge, so as to project a shower of sparks into the powder below. To the wheel-lock succeeded the snaphance, as it was called. This was the first uncouth rudiment of the flint and steel lock, which was brought to such perfection by Joseph Manton, and which has only, within a few years, been entirely superseded by the percussion cap, than which it is not easy to imagine a quicker and more infallible instrument of ignition. The snaphance came into use for fine pistols, fowling-pieces, and choice musketoons, during the English civil wars; but their rarity and high price kept them out of general use, except as the arms of gentlemen and officers of rank, while the matchlock still continued the weapon of the rank and file. It is remarkable that there has been far less advancement than one would have imagined, from the first invention of the improved arquebuse until very recent days, in the mere workmanship of the barrel and the accurate flight of the ball. The difficulty of aiming truly seems to have arisen solely from the defective method of firing, the clumsiness of the piece, and the extreme slowness of the ignition; for many arquebuse barrels of great antiquity, especially those of Spanish manufacture, having been altered to the percussion principle, new-stocked, and properly balanced, are found to shoot with great accuracy and even unusual penetration, at long ranges.

ARRACK, or RAOK, a spirituous liquor distilled from fermented rice, and also from the sap of the cocoa palm. The word is of oriental origin, and no doubt used as a generic term for all distilled liquors, as there are arracks of grapes, berries, and even of wild flowers in va-

rious parts of the East. The arrack of commerce is, however, only that distilled from rice, and comes, usually, by way of Holland, from Batavia in the island of Java. When new, it has a strong, oily taste, but when mellowed by age becomes peculiarly rich and agreeable in flavor, and is highly prized as an ingredient in the composition of punch, for which only it is used.

ARRAH, a town in Hindostan, capital of the district of Shahabad, presidency of Bengal, on the route from Dinapore to Ghazepore, 25 miles west of the former, 75 miles east of the latter. It was attacked in July, 1857, during the insurrection which then convulsed the British possessions in India, by a body of mutineers from Dinapore, who massacred the European population, without sparing one of the 50 women, men, and children, of whom it was composed. One of the 2 steamers which had been despatched for the relief of the unfortunate town grounded, and the 200 European troops that had been landed from the other steamer fell into an ambush where 9 officers and upward of 100 men were killed.

ARRAIGN, ARRAIGNMENT. Sir Matthew Hale derives these words from the Norman French *ad-reasoner*, modern *arraisonner*, to call to account. They are now used in criminal law practice to denote the act of calling the defendant to the bar of the court to answer the accusation contained in the indictment. Arraignment consists of 8 parts: 1. Calling the defendant to the bar by his name, and commanding him to hold up his right hand; this is done to identify the prisoner from a number of other prisoners who may be at the bar. 2. The reading of the indictment, to let the accused know what he is to be tried for; the clerk of the court, after saying, "A. B., hold up your hand," proceeds, "You stand indicted by the name of A. B., late of &c., for that you, on &c.," and so on to the end of the indictment. 3. After the reading of the indictment is concluded, the clerk adds, "How say you, A. B., are you guilty, or not guilty?" If the answer be "Guilty," the confession is recorded, and the matter lies over for judgment; if "Not Guilty," that plea is entered, and the clerk or the attorney-general quietly replies, "He is guilty." Upon this contradiction the issue is made up, and the trial proceeds.

ARRAN. I. NORTH ISLAND, the largest of the group of islands called the Rasaea, lying off the N. W. coast of Ireland. II. SOUTH ISLANDS, a group of small islands at the mouth of Galway bay, west coast of Ireland. III. A mountainous island in the Frith of Clyde, Scotland, 20 miles long and 10 wide. Its highest summit, Goatfell, is 2,000 feet above the sea.

ARRAN, EARL OF, head of the noble family of Hamilton, in Scotland, created dukes of Chatelherant by Henry II. of France. The earldom of Arran was originally in the family of Boyd; the earl Thomas of which name was married to the sister of King James III. of Scotland. This noble, however, falling into the

king's displeasure, was attainted for high treason; and his wife, being divorced from him, was given in marriage to James Lord Hamilton, who was created earl of Arran. From this marriage sprang the celebrated ducal house of Hamilton, which claimed to be next in royal descent to the Stuarts, and to be hereditary successors to the throne of Scotland, in the case of failure of the male line. The constant intermarriages of the Scottish kings and princesses with the families of their great nobles, led to the occurrence of many of their quasi-royal lines; all of which, more or less remotely, pretended to the crown, and caused continual difficulties and insurrections, connected with that worst of evils to a monarchical country, a disputed succession; the principal of them were the Darnley Lennoxes, the Hamiltons, and the Douglasses, all of whom, at a feud more or less constantly with one another, were always turbulent and troublesome vassals of the crown. In the reign of James IV., the earl of Arran was sent with an army of 10,000 men to reinstate the king of Denmark, uncle to the Scottish monarch, in his dominions, from which he had been ejected; and fulfilling his commission with great distinction, returned triumphantly to his own country. After the death of James IV. at Flodden, and the coronation of the infant king James V., and the appointment of the duke of Albany to be regent, Arran was constantly in a state of insubordination and disobedience to the existing government, which was itself in a most unsettled state; at one time Arran, and at another the queen mother Margaret of England, who had married the earl of Angus as her second husband, holding the reins of state. At length matters came to such a pitch of animosity amongst these warlike nobles, that the earls of Lennox and Arran, taking up arms, fought a pitched battle at the head of their vassals near the town of Linlithgow, in which Lennox was slain; this event giving rise to a deadly feud between the two families, which produced the most detrimental results to the kingdom of Scotland, and to two successive queens who governed that fierce and factious country. After the death of James V., during the minority of the beautiful and unhappy Mary Stuart, the earl of Lennox (who had married the lady Margaret Douglas, her father's half-sister, being the daughter of his mother Margaret of England, by her second husband the earl of Angus), the earl of Arran, and the cardinal Beaton all contended with one another, and in some sort with Henry VIII. of England, for the possession of the young queen's person, the two earls and the king all desiring her hand in marriage for their sons, by which means they expected to secure the crown of Scotland to their own families.—Arran, however, maintained the office of governor, and being unable to compass the marriage of Mary with his own son, consented to her union with the dauphin, afterward Francis II. of France, and having administered the govern-

ment until she attained her majority, resigned his office to the queen mother, whom Mary appointed her regent, during her absence in France, receiving in compensation for his sacrifice the gift of the dukedom of Chatelheraut, under the great seal of France, and the appointment of his son to the captaincy of the Scottish archer guard in France.—After the death of Francis II. and the early widowhood of Mary, earnest endeavors were made to bring about a marriage between her and this young lord, who, on the elevation of his father to the rank of duke of Chatelheraut, had succeeded to the title of the earldom of Arran; and it appears that strong hopes of succeeding in his suit were held out to him by the king of Navarre, and other persons in her confidence. It is not shown that Mary had ever the slightest inclination to this young man, although he was handsome, accomplished, full of talent, and educated in all the graces and refinements of the court of France; he, however, contracted a hopeless and despairing passion for her, which, when it failed wholly of success, turned into absolute madness, so that he was for a time a confirmed lunatic. Shortly after the commencement of his frenzy, he was prevailed upon by Bothwell and his father, to enter into a plot for the seizure of the queen's person, her imprisonment at Dumbarton, and the murder of her ministers; but in a lucid interval he became aware of the iniquity of the conspiracy, and revealed it to the queen and her council. How far Arran's revelations were founded on fact, how far they were the consequences of his insanity, still remains uncertain, but it seems to be indisputable that they had some foundation in fact. Arran, who was clearly insane, was long kept in confinement, not as a prisoner, but as a lunatic. From this time forth, this unfortunate nobleman disappears from history.

ARRAS, a fortified city of France, capital of the department of Pas-de-Calais, 100 miles N. N. E. from Paris. It is the birthplace of Lebon, Robespierre, and Damiens. It is strongly fortified, and has manufactures of thread, lace, and woollens; pop. 24,321. Two important Roman Catholic councils have been held here, in 1025 and 1490, and in the 15th century two treaties were concluded in Arras. In 1477 Louis XI. besieged the town in person, assaulted it, and drove out all the inhabitants, whom he replaced by people drawn from all parts of France, and named it Franchise.

ARREASTRE, the name of mills used in Spanish countries for grinding gold and silver ores. To some extent they are introduced also among other people. They consist of a circular basin of some hard rock, as granite, in the centre of which stands a strong wooden revolving shaft. Four horizontal arms project from this shaft, to which are attached, by chains, large flat stones. As the shaft revolves, these are dragged round in the basin, crushing the ore washed in from the stamps, or from the other machines, by which it has been broken

into small fragments, and prepared for the arrastre. The fine ore continually flows out with the surplus water, through conduits prepared for it in the upper edge of the basin. Mules are commonly employed to carry the shaft round, two being harnessed together at each end of a long arm, which passes horizontally through the shaft. The mills are also sometimes worked by being geared to the other machinery of large mills, which may be carried by steam or water power. The arrastres are a poor contrivance, accomplishing very little for the power required. They are, however, of simple construction, demand very little attention to keep them in repair, and if well made, are very durable, while the materials they require are always to be easily obtained in the remote regions in which they are generally used.

ARRE, a river of central Africa, and affluent of the Shari, which flows into Lake Tchad near its junction with the Shari. This river is called the river of Logone, from the town of that name, which lies on its banks. Higher up, Dr. Barth, in 1851-'2, found that it was called Serbenel. The name Arre is given by Dr. Vogel, who came upon it in lat. 9° 50' N., about 10 miles E. of the N. edge of Lake Tubori. This is the appellation under which it goes with the Musgo, who dwell on its banks. When Dr. Vogel saw it, in the beginning of the rainy season of 1854, it was about 2,000 feet broad in lat. 10°, and averaged 15 feet deep. In a few places sand-banks extended across the river, and diminished its depth to 6 or 8 feet. The current ran about 4 miles an hour. From an examination of the banks, Dr. Vogel concluded that in the most favorable time of the year the Arre attained a mean depth of at least 80 feet. See an account and map of Dr. Vogel's excursion to Musgo and Lake Tubori, in Petermann's *Mittheilungen*, Gotha, 1857.

ARREBOE, ANDERS, a Danish poet and divine, born upon the Schleswig island Arrøe, in 1587, died in 1687. In 1618 he was appointed bishop of Drontheim, but dismissed in 1622. He translated the psalms of David, and as he availed himself of this opportunity to express contrition for the misconduct which to some extent had brought about his dismissal, he was reinstated in his ecclesiastical position, so far, at least, as to be called upon to preside over the church of Vordingborg. His best work is his *Hexæmeron*, in imitation of the poem of the French poet Du Bartas, *La première semaine, ou la création*. The first book of the *Hexæmeron* is rhymed hexameters, the other books are composed in Alexandrines.

ARREOY, the name of a licentious society of Otaheite and the neighboring islands, composed of about 1,000 members, of both sexes, mostly persons of high standing, who indulged in promiscuous intercourse, and bound themselves to destroy their own offspring at the moment of birth. Thousands of Otaheitan infants were killed in this manner by their parents. Malthus speaks of this law of infanticide as in-

stituted for the purpose of averting the danger of an excess of population, while theological commentators trace this monstrous crime to some heathenish religious principle. Until the beginning of this century, this society was, according to Cook and other travellers, in a flourishing condition. Those who did not submit to the law of infanticide were expelled from the society, while to tender-hearted women who spared the lives of their offspring, the appellation of *whannownow* (bearer of children) was derisively applied. The children were generally killed by suffocation.

ARREST, the apprehending of one's person by authority of law, whether in execution of legal process, or by natural right. It does not imply an actual seizure or touch of the body; it is enough for the party to be within the officer's power and to submit thereto. In the case of a felony, private persons may apprehend a party caught in the act or upon fresh pursuit, while officers are justified in making the arrest, without a warrant, upon reasonable suspicion. In the case of a misdemeanor, such as an ordinary breach of the peace, if it be committed within an officer's view he may make the arrest, otherwise not without a warrant; but private persons have no authority so to do, unless specially authorized by statute. In civil cases an officer only can act, and his authority is limited by the process which he is empowered to execute and to the district within which it runs. The maxim that every man's house is his castle holds good as against the law in civil cases alone, the officer not being justified in breaking open an outside door or window to arrest the occupier or his family in the first instance, unless in cases authorized by statute; though he may do so after an escape, or to apprehend one not of the household, after due demand and notice, and may make his way through any inside door, if the outside be open. To obstruct process and to refuse to aid in its execution are indictable offences. Public ministers abroad, members of the legislature, and persons necessarily in attendance on a court of record, are privileged from arrest, either altogether or for the less serious causes.

ARRHIDÆUS, PHILIP, a natural son of Philip of Macedon and the dancing girl Philina of Larissa, died 815 B. C. After the death of Alexander the Great had left all things in confusion, the Macedonian troops in the East nominated Arrhidæus king, with the proviso that the child with which Alexander's wife was pregnant should be associated with him in the government. The claims of Arrhidæus were strengthened by the fact that his wife, Eurydice, was the grand-daughter of Perdiccas, Philip's elder brother. Being of weak intellect, he was a mere puppet in the hand of Perdiccas. On the death of Perdiccas, Arrhidæus and Eurydice were in Cappadocia, where Antipater, the regent of Macedonia, found them and took them over with him to Pella, in Macedonia. After the death of Antipater, the regent Polysperchon and the

dowager grandmother, Olympias, set up by preference to Arrhidæus, Alexander, Roxana's young son. Arrhidæus and his high-spirited wife, Eurydice, protested, called in the aid of Cassander, Antipater's disinherited heir, but falling into the hands of Olympias, were both cruelly murdered by her orders.

ARRIA, a Roman woman who immortalized herself by suicide A. D. 42. Her husband, Cecina Pæstus, was condemned as a traitor to put an end to his own life, by the emperor Olandius. As Cecina hesitated to do it, his brave wife took up the dagger and stuck it to the hilt in her own bosom. Handing it back to her husband she said, *Pæstus, non dolet*; "Pæstus, it does not hurt," and expired. Pæstus could not hesitate and despatched himself at once.

ARRIAN, FLAVIUS, born in Nicomedia, in Bithynia, A. D. 100, served under Hadrian and the Antonines, was prefect of Cappadocia, fought successfully there against the Goths and the Alani; after which, retiring from public life, he devoted himself to letters. Being a pupil and friend of the great Stoic, Epictetus, he published the moral teachings of his master, wrote his dialogues, of which only 4 books have reached us, known as *Philosophia Epictetus Monumenta*. He also published works upon history, geography, tactics, and hunting. The best of them is his history of the campaigns of Alexander the Great, written with great critical judgment, accuracy, and impartiality. This has secured to Arrian the first place among the historians of Alexander. The Athenians created him a citizen of Athens under the name of Xenophon, his book being likewise called "Anabasis." With this work his *Indica* is closely connected, in which he describes the Hindoos, their institutions and customs, as they were found by Alexander. He also wrote a history of Bithynia, a work on the circumnavigation of the Black sea, "How to make War with the Alani," and other smaller works, in all of which he is clear-headed, cautious in the selections of his authorities, and easy and unaffected in style.

ARRIAZA Y SUPERVIELA, JUAN BAUTISTA DE, a Spanish poet, born at Madrid in 1770, and died there in 1837. He was in early life connected with the Spanish navy, but a serious illness injured his eyes so much that he was obliged to relinquish his office. Subsequently he was for some time attached, as secretary, to the Spanish embassy at London. In 1806 he took up his abode in Paris for 2 years, when, on his return to Spain, he took an active part in politics, published his *Poesias Patrióticas* and his *Discursos Políticos*, for the purpose of rousing the national spirit. In the latter pamphlet he attacks the Cortes of 1812 and the constitution, and advocates the principles of absolute monarchy. In acknowledgment of this service Ferdinand VII. gradually raised him to an important position in the department of foreign affairs, and eventually to the office of chamberlain. A 6th edition of his poetical

works appeared at Madrid in 1829-'32, and was reprinted at Paris in 1884 and 1841.

ARRIGHI DI CASANOVA, JEAN-TOUSSAINT, duke of Padua, a French general, related to the Bonaparte family, born at Corte, in Corsica, in 1770, died March, 1853. He entered the army at the age of 15, and took an active part in the Egyptian campaigns, in the battles of Marengo, Austerlitz, Friedland, Wagram, and Leipsic, and in acknowledgment of his gallantry and his devotion to the interests of Napoleon, he was raised to the dignity of duke of Padua, with an income of 300,000 francs, soon after the battle of Friedland. During the battle of Leipsic he distinguished himself particularly by his energetic defence of the suburbs. On Napoleon's return from Elba he sent Arrighi on an important mission to Corsica, and raised him to the rank of peer of France. After Napoleon's downfall he was banished from France, but permission to return was granted to him in 1820, of which, however, he did not avail himself, as he continued to reside in Italy, until 1849, when he was nominated member of the legislative assembly by his native district in Corsica, and after that time he took up his abode in Paris. After the *coup d'état* of Dec. 2, 1850, Louis Napoleon made him one of the members of his senate. Arrighi was appointed testamentary executor of the father of the present emperor, Louis Napoleon.

ARRIS, the sharp edge or angle formed by 2 surfaces meeting each other, applied particularly to the edges in mouldings, and to the raised edges which separate the flutings in a Doric column.

ARROBA, a Spanish measure of weight and capacity. The standard great arroba for wine is 981 cu. in.; the lesser, for oil, is 771 cu. in. Spanish arroba, 25.36 lbs. av.; Portuguese, 32.38 lbs. av. The local arrobas vary between these two. In capacity the Spanish great arroba is 2.54 gallons; lesser arroba, 2.78 gallons. There are also local variations from this to the extent of nearly one-third.

ARROE (or HARNISH) ISLANDS, a group of small islands in the Red sea, about 80 miles N. W. of Mocha.

ARROO, ARoo, or AREU, a group of islands north of Australia, lying between lat. 5° 30' and 6° 25' S., and long. 184° 10' and 184° 45' E. At the end of them is a considerable reef of coral, where pearls and trepang abound. The products are pearls, mother-of-pearl, tortoise-shell, birds of Paradise, and trepang. Dobbo, a town in the island of Warud, is the entrepot of the islands, and imports yearly British goods—calicoes, iron, hardware, and gunpowder, shipped from Singapore—to the amount of \$150,000. Pop. 60,000, a mixture of the Malay and Polynesian negroes, of which a portion profess Christianity.

ARROWROOT, a name loosely applied to the starch extracted from a number of roots and grains, as the maranta, manihot, tacca, turn, potato, &c. It was originally limited to

the starch of the *maranta arundinacea*, a plant which grows in the East and West Indies, and which was considered a specific for the wounds caused by poisoned arrows. It is a simple food, in high repute for invalids. Not containing nitrogen, it is well adapted for producing fat and promoting the warmth of the body. According to Liebig 4 pounds of it contain as much carbon for supplying animal heat by its combustion as 15 pounds of animal flesh. In its preparation the tubers are mashed, and the pulp soaked in water. This dissolves out the starch, which is separated from the fibre by straining. After settling, the clear water is drawn off, the starch is washed with fresh water, and again allowed to settle. It is finally dried in the sun. From the false arrowroots, and from the mixtures of the different kinds, the genuine maranta arrowroot can be distinguished by the use of powerful microscopes. The different forms of the little granules are very characteristic when thus observed. The most common adulterations are with the cheap potato starch, sago, and manihot, or tapioca. The granules of the potato are of very irregular, ovoid, and truncated forms, and of various sizes, from $\frac{1}{16}$ to $\frac{1}{8}$ of an inch in diameter, while the particles of the arrowroot are very regular ovoid forms, and of nearly equal sizes. Dilute nitric acid is also a good test. When triturated with it in a mortar, arrowroot changes into an opaque paste, which is some time in becoming viscid. But potato and flour starch thus treated form immediately a transparent, thick paste. From the inferior starches alcohol extracts an unwholesome oil of disagreeable odor, but none from arrowroot. The composition of the fresh root was ascertained by Benzon to be as follows: volatile oil, 0.07; starch, 26; vegetable albumen, 1.58; a gummy extract, 0.6; chloride of calcium, 0.25; insoluble fibrine, 6; and water, 65.5, in 100 parts. Of the starch 23 parts are obtained in the form of powder, and the other 8 are extracted in the form of paste from the parenchyma with boiling water. The great variety of sources from which the different arrowroots are obtained—from different countries and different varieties of plants—renders it important that the name should be applied with more definiteness for the protection of the public in this article of food. Thus we have a so-called arrowroot brought from Florida, derived from a plant allied to the sago-palm. This plant seems peculiarly adapted to certain portions of southern Florida. On the borders of an immense basin termed the everglades, is a strip of land averaging some 15 miles in width, barren in soil, and covered with dwarf pines. Upon this miserable tract of country grows, in the greatest profusion, the coontee, or Florida arrowroot, which, though of an inferior quality, containing only 12 per ct. of starch, gives a high value to a region, which would otherwise be entirely worthless. The expense of digging and preparing the root is very trifling, and there is no difficulty in propagating it, as wherever a small

piece is left in the ground there will appear a new plant.

ARROWSMITH, AARON, an English geographer and map-maker, born in Winston, Durham, July 14, 1750, died April 23, 1828. He went to London in 1770; in 1790 he published his large map of the world on Mercator's projection, containing a great amount of new matter, which soon brought him into general notice. He published, altogether, more than 130 maps, which were highly esteemed throughout Europe, particularly for the excellence of the engraving.

ARSACES, the founder of the great Parthian monarchy, which was later the most effectual barrier to the further progress of the Roman arms and empire in the far East. Justin speaks of him as "of doubtful origin, and used to live by robbery." In the reign of Antiochus Theos, of Syria, 250 B. C., Arsaces led the revolt of the Parthians, and declared himself their independent king, a position which he successfully maintained. Out of respect for his memory, his successors called themselves Arsacidæ.

ARSENAL (Lat. *ars navalis*, a naval citadel), a public establishment designed for the manufacture and storage of arms, and all military equipments, whether for land or naval service. The arsenals of Europe are immense enclosures, containing stores of military engines and pieces of artillery arranged in order and classes, halls in which magazines of musketry are kept, adjacent buildings furnished with founderies and forges, numerous smaller workshops, and offices or bureaus for the superintendents of the establishment. The principal arsenal of England, after the tower of London, is that of Woolwich, remarkable for its size, and in which 100,000 muskets are arranged in admirable order. The other great English arsenals are those of Deptford, Chatham, Sheerness, Portsmouth, and Plymouth. France has 8 arsenals of the first class, those of Brest, Toulon, and Rochefort. There was formerly an arsenal at Paris, which was destroyed in 1563 by the accidental firing of 15 or 20 tons of powder which its several buildings contained. The terrific explosion was heard at Melun, 23 miles distant, and sent portions of the walls of the arsenal into the suburb of St. Marceau. The fishes were killed in the river, the neighboring houses were ruined, and 30 persons thrown into the air fell in fragments. The principal arsenals in Spain are at Cadiz, Carthagena, Barcelona, and Gibraltar, the last belonging to the English; the principal in Italy are at Genoa, Naples, Venice, and Trieste; in Denmark, at Copenhagen; in Sweden, at Carlscrona; in Russia, at St. Petersburg, Cronstadt, and Kiev; in Turkey, at Constantinople; in Egypt, at Alexandria; in Brazil, at Rio Janeiro; in Germany, at Prague, Vienna, Budweis, and Berlin. Dantzic and Hamburg were made maritime arsenals by Napoleon, but have again become trading ports. The arsenal of Venice was built in the 14th century by Andréa Pisano, and has its principal

gate adorned with 2 white marble lions, which were taken by the Venetians from the Piræus of Athens. In the United States of America the term arsenal is applied particularly to places for the storage of arms and munitions of war, and places for their manufacture are called armories. In this sense the principal arsenals are at New York, Boston, and Baltimore, and the only public armories at Harper's Ferry, Va., and Springfield, Mass. Each of the two armories employs about 250 workmen.

ARSENIO (Gr. *αρσενικον*, masculine, so named from its masculine power in destroying men). The name is now in common use applied to the white oxide of arsenic, or arsenious acid. In ancient times it was a reddish colored mineral compound of arsenic and sulphur, to which this name was given—a substance in use then as a medicine, and also in painting. Metallic arsenio occurs native in veins in the crystallized rocks and older slates, and it is also prepared by subliming its oxide in presence of a reducing flux, and protected from the air. Many modern chemists do not regard it as a metal, though it is commonly treated as such. Combined with oxygen, it unites with metals, forming arsenites and arseniates of these metals, but is never itself the base of any salt. The ores of the metal are not therefore carbonates and sulphates of its oxide, as is common with other metals, but they are combinations of the metal itself with sulphur, forming the sulphuret, and this combined with iron, cobalt, or nickel; or they are oxides of the metal; or else compounds of its oxides with other metals, as above mentioned. It is remarkable as the most volatile, and one of the most combustible of the metals. It is readily sublimed at a temperature of 360° F., apparently before it melts. At a greater heat it takes fire, and burns with a pale, blue flame. In subliming, it gives out dense fumes of a peculiar garlicky odor, that distinguish it from other substances, even when present in very minute quantity. It is more brittle than antimony, so much so, that it may be reduced to fine powder in a mortar. Freshly prepared, it has a brilliant metallic appearance, a bluish white color, and crystalline structure, but these properties are not permanent in the air. The metal becomes black in this, and crumbles to powder. In water, it may be kept without change. Its specific gravity is 5.96. It is the softest of the solid metals, its hardness being rated on the mineralogical scale at 3.5. Arsenic readily combines as an alloy with other metals, rendering them more fusible and brittle. Its presence is particularly injurious in iron ores, making the cast metal exceedingly brittle, but it gives great fluidity to the melted iron, so that for fine castings, that do not require much strength, but sharply defined and delicate outline, it is sometimes desirable. It also increases the brightness of some alloys. It is not employed for any useful purposes in the metallic state.—Arsenious acid, or white arsenic, is the most common combination of this metal. It is the

sublimate, which escapes when arsenic is heated in the open air. The metal combines in the proportion of 1 equivalent with 8 of oxygen, the compound consisting of arsenic 75.76 per cent. and oxygen 24.24 per cent. The sublimate, after exposure, is a white powder, but may be collected in the form of a glassy, transparent cake, or crystallized in octohedrons. It is partially soluble in boiling water, and less so in cold water. The solution is slightly acid, having but a feeble reaction upon litmus paper.—The following are some of the most important tests given for detecting the presence of this poison: The blow-pipe develops its peculiar odor, with little liability of mistake, in arsenical matters, heated on charcoal. It also reduces the metal, and causes it to condense in the form of a metallic ring in the cold part of a glass tube, in which the substance containing arsenious acid has been placed with carbonate of soda and charcoal, and heated. The presence of arsenic may be shown by this method, when the particle containing it is so small as to be invisible to the naked eye, as in the following manner, communicated by Prof. A. K. Eaton, of New York: The microscopic particle is placed in a bulb of a small glass tube, and a fine splinter of charcoal is placed by the side of it. The whole should then be thoroughly dried. The neck of the bulb is next to be drawn out to a capillary tube, and cooled. On applying heat to the matter in the bulb, this produces, by sublimation, a plainly visible arsenical ring in the fine bore of the tube.—The acid is precipitated from its solutions by sulphuretted hydrogen in the form of tersulphuret of arsenic of a lemon-yellow color. This is a very accurate test, and is so delicate that the yellow tint is apparent when only a ten-thousandth of the acid is present, and the precipitate when the arsenious acid is in the proportion of 1 part to 80,000 of water. It is precipitated in a white powder by excess of lime-water, when forming one five-hundredth part of the liquid. Ammonio-sulphate of copper gives an apple-green precipitate, apparent when the acid forms one twelve-thousandth part. A still more delicate test is that of Prof. Reinsch, to place a slip of bright copper-leaf in the aqueous solution acidulated with hydrochloric acid. A gray film of arsenic is deposited upon the copper, showing the presence of less than one hundred-thousandth part of the acid. It is affirmed that even a two hundred and fifty-thousandth part of arsenic will not escape detection by this test. Nitrate of silver gives with it a yellow precipitate.—It should be borne in mind, in attempting to determine the presence or absence of arsenious acid in any mixture in which organic substances, particularly those which are not volatile, are present, that some of these substances often produce very similar reactions, and, on the other hand, that they prevent or modify those which arsenious acid should produce in mixtures where no organic substances are present.—“Marsh’s apparatus” has been

long known as affording an easy means of detecting the presence of arsenious acid. The process depends on the property possessed by arsenic of forming a gas with hydrogen, and depositing itself, in the metallic state, upon the surface of a cold plate, held over the flame of the burning gas. Hydrogen is prepared in the usual way, with granulated zinc and diluted sulphuric acid, in a glass flask provided with a tube of glass drawn out to a small orifice at its outer end; or a mere tube itself may be used, bent in the form of the letter U, one end drawn out, the other left open for introducing the materials, and closed with the thumb when in use. The hydrogen evolved should first be tested by burning it against a porcelain plate to prove that it is free from arsenic, and then the suspected liquid is to be introduced into the apparatus. If it contain any traces of arsenious acid, it will be shown by the bluish white color the flame will assume, by the fumes of the acid, and brown shining spots of arsenic of metallic appearance will be deposited upon the porcelain plates. By heating the glass tube with a spirit-lamp, metallic arsenic will be deposited in the colder part of it, forming a beautiful incrustation. The tube may be cut off at this point, the arsenic be converted into arsenious acid by heat, dissolved in hot water, and tested by the ammonio-sulphate of copper and nitrate of silver. This apparatus has been modified by Dr. Ure, so that the gas may be made at will to pass through the solutions, by which the arsenic is precipitated, or to deposit the metallic incrustation in the tube, or the spots upon the plate. In its most simple form, however, it is a very useful contrivance for detecting arsenic. Antimony combined with hydrogen produces a spot that may be confounded with that of arsenic. But a solution of hypochlorite of soda instantly dissolves arsenical spots, and has no effect upon those of antimony. The arsenical spots also are volatilized at a temperature of 500° applied by a bath of olive oil, while the antimonial are unchanged. The proper solvent for organic matters supposed to contain arsenic is a mixture of 3 parts of hydrochloric and 1 part of nitric acid, and the quantity of this should be equal in weight to the organic substance, which, before being dissolved, should be cut into small pieces and dried at a gentle heat. The mixture being distilled, the arsenic, if present, comes over in the form of the volatile terchloride, which is then to be converted into the tersulphuret by sulphuretted hydrogen.—Arsenious acid is manufactured on a large scale at Altenburg, and Reichenstein, in Silesia, from the ore called arsenical iron. In many other places it is obtained as a secondary product in the treatment of cobalt ores, and of other metallic ores with which arsenic is associated. The process consists in roasting the ore in large muffles, 10 ft. long and 6 ft. wide, in charges of 9 or 10 cwt. each, and collecting the vapors, as a sublimate, upon the walls of a succession of chambers, arranged in a tower through which

they pass, and from which the incondensable gases escape by a chimney. The muffles are placed inclining upward from their mouth, and are left open for the passage of heated air to aid in subliming the arsenic and converting it all into arsenious acid. A charge is worked off in about 12 hours, and is immediately followed by another. Charcoal is the fuel used, as very little more heat is required than what is evolved by the chemical changes. The quantity consumed is very small. The purest arsenic is found in the flues and chambers nearest the furnace; in the upper chambers it is intermixed with the condensed sulphurous vapors. To purify it for market it is all sublimed again. It is placed in cast iron or porcelain pots, which hold $3\frac{1}{2}$ cwt. each, and these are set vertically in a furnace. They open above into sheet-iron drums, which serve as condensers, and which are connected by a funnel with the condensing chamber. The fire must be carefully regulated to maintain the proper temperature for the acid to sublime in the form of a glassy cake. If the heat is too high, metallic arsenic is apt to be sublimed and mixed with the acid appearing in dark spots. This must be picked out, or the whole sublimed over. The preparation of arsenious acid is a most dangerous occupation. The workmen employed generally die before the age of 40; indeed, their mean term of life is stated to be only from 30 to 35 years. Dumas states that they are compelled to avoid alcoholic drinks, and live principally upon leguminous vegetables, with plenty of butter, taking very little meat, and that very fat; and to each man 2 small glasses of olive oil are administered daily. In removing the acid from the chambers the workmen are completely enveloped in a dress and helmet of leather, the latter furnished with glass eyes. The passage for the air is protected with a wet sponge, by which it is filtered as it passes to the mouth and nostrils.—Arsenious acid is also found native, crystallized in octohedrons and capillary forms, at Andreasberg, in the Harz, and at mines in Hungary and Bohemia. Combined with iron and sulphur it forms the common ore of arsenic, called arsenical iron, or mispickel, which is of frequent occurrence in veins of iron pyrites, and of copper, lead, silver, zinc, cobalt, nickel, and tin ores. This ore is found in many localities in Connecticut and New Hampshire particularly, but is not rare in any of the New England states, or wherever pyritous ores are found along the range of the primary rocks of the Appalachian chain. The acid is also found in the ashes of many plants; in certain soils and mineral waters; and Orfila has detected it in the earth of graveyards. Its diffusion in minute quantities is very remarkable.—The uses of arsenious acid are principally in medicinal preparations, such as Fowler's solution, the basis of which is the arsenite of potash; it is also administered, without combination with other substances, as a tonic. It acts powerfully in doses of $\frac{1}{4}$ to $\frac{1}{2}$ of a grain, warming and exhilarating the system, and increasing its activity

and vigor. It is stated that in some parts of the world, as in the mountainous region of Hungary, it is systematically taken by the peasantry, both fasting and as a seasoning with their food. But this statement of Dr. Tschudi, in a letter to the *Gazette des Hopitaux*, which, with many wonderful details, has been copied into a great number of publications, is not worthy of credit. The impression among medical men is that from 2 to 8 grains of arsenic is a fatal dose, though larger doses are sometimes rejected from the stomach by vomiting. The system, moreover, becomes more and more susceptible to mineral poisons; so that a smaller dose after a time produces the effects that a large one would at first. Johnston, however, in his "Chemistry of Common Life," inclines to the opinion that arsenic may be found to lessen the natural waste of the body and the discharge of carbonic acid from the lungs, and consequently the quantities of oxygen required. Breathing will hence be less difficult in ascending hills, and the fat of the food will not pass off in carbonic acid gas, but go to increase the plumpness of the individual. These opinions are probably based on the statements of Dr. Tschudi. In desperate cases of bilious fever arsenic is resorted to as a tonic more powerful than quinine. By Dr. Tschudi it has been given with success in asthma. It is administered to horses to increase their spirit and improve their coat. It is tied in a rag to the bit, and is dissolved by the saliva. The horse likes it, and is very possibly improved in condition by its use; but when the habit of taking it is left off he falls away, and never afterward has health or strength. In the western States it appears from recent accounts that it is advantageously administered to hogs that are troubled with attacks of the kidney worm, and that it is the only medicine that saves them when thus attacked. Whether the large doses given for this purpose have any effect upon the pork, is not stated. The acid is also employed in the glass manufacture to destroy the color imparted by the protoxide of iron, and by taxidermists in preserving specimens of natural history and skins from insects and putrefaction. It is lately proposed to introduce it into the iron employed in ship-building, for the purpose of preventing the attachment of barnacles, and other animal matters to the bottoms of ships. This is done by mixing it with the iron in the puddling furnace, in proportions varying from 2 to 5 per cent.; it is thus diffused equally through the whole mass of iron, and its effect continues till the metal is worn out.—*Antidotes*. When arsenious acid has been taken in poisonous doses, an emetic should be immediately administered, or the stomach pump at once applied. This is to be followed by doses of freshly precipitated peroxide of iron, or of caustic magnesia mixed with water. The peroxide of iron may be prepared by dissolving copperas in hot water, or pieces of metallic iron, as tacks, in nitric acid. To the copperas solution nitric acid should be added, till the solution becomes yellow, heat being ap-

plied at each addition of acid. The peroxide of iron is precipitated from this solution by ammonia, either the aqueous solution or the carbonate. The precipitate, filtered through paper, should be washed with boiling hot water; it is then mixed with water, and drank. The effect of the peroxide of iron in neutralizing the action of arsenious and arsenic acids is seen in the harmless nature of the chalybeate waters of Wattviller, in which arsenic was found by Lassaigne to be present to the amount of 2.8 per cent.—*Arsenites*. Arsenious acid unites with bases, and forms arsenites. Those of any interest are arsenite of potassa, which has been already referred to; Scheele's green, and Schweinfurth's green. These are beautiful greenish-colored powders, used as pigments. They are arsenites of copper, of very poisonous qualities; yet it is stated that they are sometimes made use of to color confectionery. The bright green colors of some paper-hangings are also produced by these combinations, and instances are recorded of their use being attended with dangerous consequences to the occupants of the rooms.—*Arsenic acid* is a deliquescent vitreous substance, of specific gravity 3.4 to 3.7. It consists of 1 equivalent of arsenic and 5 of oxygen, 65.23 parts by weight of the former, and 34.73 of the latter. It is soluble with great difficulty, and after long digestion in hot water. The solution possesses acid properties. The compound is a more virulent poison than arsenious acid. Its combinations with bases are arseniates. These possess no particular importance. It is prepared by dissolving metallic arsenic in nitric acid, evaporating to dryness, dissolving up any arsenious acid, and again evaporating. The combination of arsenic and hydrogen gas has been alluded to in speaking of Marsh's apparatus. This gas is generally known as arseniuretted hydrogen, and also arseniohydric acid. Realgar, or red orpiment, is a native combination of arsenic and sulphur, found in Germany, Hungary, and other places. It is also artificially prepared for a pigment, being of a beautiful orange-red color. In fire-works it gives a very brilliant white flame. It consists of 1 equivalent of arsenic and 2 of sulphur. Yellow orpiment contains one more equivalent of sulphur. This is also found native, and is prepared artificially. It is the basis of the pigment called king's yellow. It is used for dissolving indigo, in the cold vat, and also in calico printing. The name, orpiment, is a corruption of its Latin name, *auri pigmentum*, golden paint, so named because of its color, and because it was supposed to contain gold.

ARSENIUS. I. A deacon of the Roman church, renowned for his learning and piety. Pope Damasus sent him to Constantinople A. D. 383, to act as tutor to Arcadius, son of the emperor Theodosius. The emperor one day finding Arsenius instructing his son in a standing posture, while the prince remained seated, corrected him with severity, but with so little effect, that Arcadius soon after at-

tempted to make way with him. The officer whom he wished to employ for the purpose warned Arsenius of his danger, who fled to the desert of Scete, where he lived many years. He died at Troë, aged 95. II. A Greek writer, at the close of the 15th century, who died at Venice in 1485. He abandoned the Greek for the Latin church, and was made archbishop of Malvasia, in the Morea, by Paul III. He published a collection of Apophthegms of great men, in Greek, and Scholia on 7 of the plays of Euripides. III. Bishop of Constantinople in the 18th century. He excommunicated Michael Palæologus for depriving John Lascaaris of the crown, and upon his refusal to grant him absolution, unless he would resign the throne, he was banished, and died in exile.

ARSINOE, a city of Egypt, and the metropolis of one of the nomes or districts into which that country was anciently divided. It lay west of the Nile, and not far from Lake Moaris. Ptolemy Philadelphus gave it that name in honor of his favorite queen Arsinoë. Originally, however, it was called Orocodilopolis ("the city of crocodiles") by the Greeks, because that animal had a temple there, in which he received divine honors from the Egyptians, and because of the number of dead crocodiles which were interred near the city. The city no longer exists, but its ruins may be seen in the vicinity of the modern Medinet el Faioum.—Also, a city of Egypt, which stood at the extremity of the Red sea, near the site of the present town of Suez. Ptolemy Philadelphus considerably enlarged and improved this city, and called it Arsinoë, after his sister and queen. Arsinoë was connected with the Nile by the Ptolemean canal, and was long the great eastern emporium of Egypt. But the dangers incidental to the navigation of the northern section of the Red sea led in time to the construction of harbors lower down the coast, and to the diversion of trade to new channels.

ARSINOE. I. A concubine of Philip, the son of Amyntas, who became the wife of Lagus, a Macedonian general, and the mother of Ptolemy I., king of Egypt. She was said to have been pregnant at the time of her marriage, and her son Ptolemy was generally regarded as the brother of Alexander. II. A daughter of Ptolemy I., king of Egypt, was married to Lysimachus, king of Thrace, who had cast off his former wife Amastris, that he might espouse the lovely Egyptian. Arsinoë being determined to secure the Thracian sceptre for her own issue, caused Agathocles, the son of Amastris, to be put to death. The consequences of this crime, however, were such as Arsinoë had not anticipated. Lysandra, the widow of Agathocles, fled to Syria with her fatherless children, and implored Seleucus to avenge the murder of her husband. A war ensued between the Thracian and Syrian monarchs in which Lysimachus lost his crown and life. After this catastrophe Arsinoë sought refuge in Cassandria, a city of Macedonia, where, with her sons

by Lysimachus, she remained in security for some time. But Ptolemy Ceraunus having assassinated Seleucus, and seized the crown of Macedonia, became desirous of gaining Cassandria, and getting the heirs of Lysimachus into his power. To effect these objects the more easily, he made an offer of his hand to Arsinoë, who consented to accept it. No sooner, however, did Ceraunus find himself in possession of the city than he caused the helpless offspring of Lysimachus to be slain in the presence of their mother. The disconsolate Arsinoë now fled from Cassandria to Samothrace, whence she proceeded to Egypt, the country of her birth. Here she was kindly received by her brother Ptolemy Philadelphus, the king, who speedily became enamored of her and made her his queen. She had no issue by Philadelphus.

III. A daughter of Ptolemy Euergetes, married to her brother Philopator, whom she accompanied to the war against Antiochus. After her return to Alexandria, a courtier named Philamon put her to death by order of the king. But her murder was subsequently avenged by her friends, who killed Philamon and all his family. This queen bore Ptolemy Epiphanes to Philopator. IV. A daughter of Ptolemy surnamed Auletes, was proclaimed queen by the Alexandrians after her brother Ptolemy Dionysius had become prisoner to Cæsar. She subsequently, however, fell into the hands of the conqueror, was carried to Rome, and served to adorn his triumph. Her deportment while passing through that cruel ordeal excited the sympathy of the Roman people, and of Cæsar, who presently restored her to liberty, and permitted her to return to Egypt. Her end was unfortunate. Antony at the instigation of her sister Cleopatra, had her taken from the temple of Diana at Miletus, whither she had fled for refuge, and barbarously murdered.

ARSON, in criminal law, the malicious and wilful burning of the house of another. To constitute the offence 3 things must concur: 1. There must be an actual consumption by fire of the whole or part of the house (which comprehends not only the dwelling but outhouses appurtenant thereto); the slightest charring, but not the scorching of the wood, is enough. 2. The house burned must be another's: for a man to burn down his own is not arson, though if in so doing he set fire to his neighbor's, it is the same as if that had been fired in the first instance, since a man has no right to use his own property to the injury of another's, and is presumed to intend the natural consequences of his acts. 3. The burning must be malicious and wilful; if it result from accident, or mischance, it is not arson, but trespass. These rules of the common law have, however, been modified more or less by statute, both in England and America. It is made arson to burn other things, such as cornricks in England, beside houses; and the general and statutory provisions are such as not to make it a necessary ele-

ment of the crime, that the house should belong to another, especially if it be a dwelling-house, in occupation at the time. Most statutes on the subject establish different degrees of arson, according to the enormity of the offence; to each of which proportionate penalties are affixed.—The old writers speak of arson, highway robbery, and ravage (*depopulatio agrorum*), as hostile acts, bordering upon treason, all of which were denied benefit of clergy at common law. In the reign of Henry VI., arson was by statute declared to be high treason, and visited with the penalties thereof. It has always been punished with great severity. In the reign of Edward I. the incendiary was, by a kind of *lex talionis*, burned alive. Arson is still a capital offence in England, and in many of the United States, in the case of a dwelling-house burned in the night-time. In some of the states the penalty of imprisonment for life, or for a less period of time, has been substituted for that of death. Arson of a less heinous character is punished less severely. The tendency in this country is to confine the punishment of death to the crimes of treason and murder.

ART, *FINIS ARTIS*. Art is the means employed by man to adapt existing things in the natural world to his material necessities, and his intellectual tastes. Man finds himself in the world without food, raiment, or habitation; this first want stimulates his invention, and out of some material at hand he constructs an implement to secure food; next the means of producing fire; then he invents cooking utensils, and as he advances in civilization, he raises cooking into an art, regulated by the combined sciences of physiology and chemistry. Thus he invents machinery of every variety to carry on the necessities and luxuries of life by art. For instance, the Esquimaux' hut and the wigwam of the North American Indian, supply the rude want of shelter; but with the increase of man's abilities and resources, necessity and taste urge him on to the most complicated and beautiful structures. The first music is merely a discordant succession of sounds, but by means of art it has been carried to the most perfect harmonies. In the same way the savage wardance has been converted into an elegant and health-promoting exercise. The operation of art is also seen in the indescribable varieties of costume with which man from time to time has disfigured or adorned himself. In the beginning, art and invention are synonymous; for instance, in the manufacture of glassware, the means were invented by the aid of art; but the art of producing those wares continues, and is improved after the invention has been perfected.—The mechanic arts are those which comprehend the means of promoting and facilitating the necessities of existence. The fine arts begin with ornamentation. A canister or flask well secured, is perfectly adapted to contain powder with safety; but when it becomes carved or embossed with emblems of the hunt, it becomes a product of taste. A trough of bark

so placed as to convey water from one point to another, is an example also of art; but when the Romans built their famous aqueducts, with arch upon arch stretching for miles across the country, they had called in the aid not merely of art, but of fine art, and that on a very grand and noble scale. So too the plainest and simplest structure to protect against the elements, might be used as a place for divine worship; but when the Egyptians and the Grecians built their temples, the fine arts were called into use to adorn them with symbolic carvings and symmetrical forms. As more striking examples of the fine arts in this respect, the church of St. Sophia at Constantinople, and St. Peter's at Rome, may serve. In these, we find architecture, sculpture, and painting, in the most elaborate and ornate combination, only complete, however, when we have also the ceremonies of the church and the sublime music of religion. Art administers to the necessities of life, while in addition to this the fine arts address the imagination. Thus in civilized nations, in proportion to the development of the intellect and fancy, we find the fine arts entering largely into the ornamentation of even the most common as well as the greatest objects. Each of these is treated under its appropriate head. See ARCHITECTURE, DANCING, MUSIC, PAINTING, and SCULPTURE. See also *ÆSTHETICS*.

ART AND PART, a Scotch law term, signifying complicity in both contrivance and perpetration of crime; at once covering our own law terms accessory and principal.

ART-UNION, a name given to societies for the encouragement of the fine arts by the purchase of works of art out of a common fund raised in small subscriptions or shares, and their distribution by lot. The idea originated with M. Hénin, an eminent French amateur, who in 1814 founded a society of this kind in Paris, which in 1816 was merged into the *Société des amis des Arts*. In Germany, the first art-union was founded at Munich in 1828, by Domenico Quaglio, Stieler, Peter Hess, and other artists. This union has more than 8,000 members, and in the 18 first years of its existence paid on an average \$4,000 a year for works of art. The king of Prussia and Alexander von Humboldt took an active part in the establishment in 1828 of the Berlin art-union. Since that time, Dresden and Leipzig have followed the example: indeed, art-unions have spread all over Germany, until at this moment there are 60 in active operation. In Dresden, Leipzig, Breslau, Stettin, &c., fine galleries of art are connected with them. In Bremen, a fine hall has been built for the use of the art-union. The Düsseldorf and Frankfurt-on-the-Main art-unions, the Prague art-union under the direction of Count Franz Thun, the Austrian art-union, which was established in 1850, independently of the Vienna art-union, all pay much attention to monumental and architectural art. The Cologne art-union takes an active part in the completion of

the Cologne cathedral. In 1851 Roman Catholic art-unions were set on foot, and at the synod of Elberfeld, in 1851, the question of Protestant art-unions was agitated, and in 1853 several evangelical societies were established. All these various art-unions have given a powerful impulse to the fine arts at home and abroad, especially that of Düsseldorf, which was founded in 1829, and during the 20 first years of its existence laid out on an average \$10,000 a year for works of art, as for instance: 24 paintings for altars, 11 oil paintings for public buildings, including the frescoes in the city hall of Elberfeld, and the fresco paintings in the emperor's hall at Aix-la-Chapelle. From Germany the idea spread over Sweden, Norway, Denmark, and in 1884 found its way into Great Britain. From a report issued in 1886 by a select committee of the house of commons, we take the following remarks:—

"These associations, for the purchase of pictures to be distributed by lot, form one of the many instances in the present age of the advantages of combination. The smallness of the contributions required brings together a large mass of subscribers, many of whom, without such a system of association, would never have been patrons of the arts."

Some time after the appearance of this report, in 1837, a number of gentlemen, among whom were Mr. Ewart, M. P., the chairman of the select committee referred to, and 4 other members of parliament, established the "London Art Union," which increased so rapidly that the subscription, which in 1837 amounted to only about \$500, reached in 1856 the amount of about \$90,000. The success of the London art-union has given rise to many similar associations in various towns of England, and also to an association for the promotion of the fine arts in Ireland. The first society of this description in the United States was founded in New York in 1839 under the title of the "American Art Union," and was in active existence until the close of 1851. In 1849 it had 18,960 members and an income of \$96,800. It distributed that year 1,010 works of art, including paintings, bronzes, and medals, and also 18,960 engravings, and as many more sets of lithographed designs in outline. Its operations for 18 years may be summed up as follows: Number of subscriptions, 89,610; amount of receipts, \$458,858 20; number of paintings, statuettes, medals, and bronzes, purchased for distribution, 4,402; number of engravings, including sets of prints and lithographed outlines given to its members, 165,767. During the last 8 years it also furnished to each of its subscribers an illustrated monthly publication devoted to the affairs of the institution, and also to art news and essays, and criticisms on art subjects. The close of the American art-union in 1851 was exclusively owing to the interference of the law in the state of New York with the system of distribution by lottery. The same difficulty existed in England in reference to the London art-union; but there it has been obviated by a new act of parliament. It seems that in New York a similar act could not be passed without a change of the constitution.

ARTA (anciently *Ambracia* and *Ambracius Sinus*), a gulf and town of Albania, on the boundary line between Turkey and Greece. The gulf is 25 miles long and from 4 to 10 wide. The entrance is narrow, of about half a mile general width. The gulf is surrounded with high land. On the northern side of the entrance is the small town of Prevesa, and on the south is the town of Vonitza. The rivers Luro and Arta flow into the gulf; they are only navigable for boats. The little town of Arta, from which the gulf takes its name, is about 7 miles up the river. It is governed by a Bey, and is in the pashalic of Yannina. It was stormed by Marco Bozzaris in 1828 during the war of independence, and has never recovered its former prosperity. A bridge built by the Venetians over the river still remains; it is 200 yards long, and the height of the centre above the river is 100 feet. The gulf abounds with sardines.

ARTABANUS, a native of Hyrcania, who assassinated Xerxes, and incited one of his sons to kill another in order that he might then kill the survivor and seize the crown. He failed in the attempt to murder the second son, and was killed himself.

ARTABAZUS, son of Pharnaces, a Persian who flourished in the reign of Xerxes. He commanded a division at Plataea. After the defeat, he led his men by forced marches to Byzantium, whence he transported to Asia the remnant of it which cold, fatigue, and the sword, had spared.

ARTALI, GRUSKPRZ, a brave soldier and celebrated duellist, was born at Mazara, in Sicily, and died at Naples, in 1679, aged 51. He was knighted for his bravery during the siege of Candia by the Turks, and on his return to Europe was much noticed by several princes, the duke of Brunswick and the emperor Leopold among others. His skill as a duellist gained him the name of the Chevalier du Sang. He cultivated a literary taste, and wrote several poems.

ARTAUD, NICOLAS LOUIS, a French scholar born at Paris in 1794; was, under the restoration, one of the professors at the college Louis le Grand, when, on account of his liberal opinions, he was requested to discontinue his services. After the revolution of 1830 he became inspector of the academy of Paris, inspector-general, chevalier, and officer of the legion of honor. He is the author of an essay on the poetical genius of the 19th century, and of translations of Sophocles, and Euripides, the comedies of Aristophanes, and Cæsar's Commentaries. In 1840 the French government sent him to Algiers to report on the condition of public schools in the colony.

ARTAUD DE MONTOR, ALEXIS FRANÇOIS, chevalier, a French diplomatist and author, born at Paris in 1772, died in 1849, was for many years the secretary of the French embassy at Rome, and became the biographer of the pope, Pius VII. For some time he was superseded in his diplomatic mission by Chateaubriand, who,

however, on retiring after the death of the duke of Enghien, made place again for Artaud, who remained in Rome until 1805, when he was appointed chargé d'affaires at Florence. In 1807 he was suspected of an intention to frustrate Napoleon's ambitious designs upon Tuscany, and was recalled. In 1830 he retired from public life, and, in the same year, he was elected honorary member of the academy of inscriptions in the place of the marquis de Villemain.

ARTAXATA, an ancient city, on the Aras, 68 miles S. E. of Erivan, formerly the capital of Armenia, and now in ruins. It was destroyed with fire by the Roman general Corbulo, but rebuilt by Tiridates, who called it Neromia. In A. D. 370 it was taken by the Persians, who partially destroyed it and carried into captivity most of its inhabitants. In A. D. 450 a famous council was held here, at which the patriarch Joseph presided.

ARTAXERXES, or **ARTOXERXES**, a Persian compound word, signifying, according to Herodotus, "great warrior," and the title of several Persian kings. I. **ARTAXERXES I.**, surnamed Longimanus, according to some authorities, on account of one of his arms being longer than the other, or, according to others, on account of the uncommon size of his hands. He was the 8d son of Xerxes I., and was brought to the Persian throne by the assassination of his father and elder brother Darius by Artabanus (465 B. C.), the captain of the guard. Artaxerxes nearly shared the same fate by the same hand, but the attempt being discovered, the dagger of the son avenged the double murder of his house, and saved his own life. Troubles in Bactria, excited by his elder brother Hystaspes, immediately engaged his attention. Meanwhile Egypt, which had been a Persian province ever since its reduction by Cyrus (535 B. C.), seized upon the favorable opportunity, and, for the 8d time, revolted against the Persian yoke. The aid afforded by the Athenians to Egypt rendered this struggle more severe and protracted than the former two. Artaxerxes at length compelled the Athenians to evacuate Egypt, leaving it then a matter of small difficulty to reduce it to subjection. The Athenians, however, once in arms, continued the struggle on their own account under Cimon with various success, until Cimon being suddenly cut off by disease, a peace was concluded, having for its basis the virtual acknowledgment of the Ionian independence, and imposing humiliating restrictions on the naval movements of the Persians. The reign of Artaxerxes lasted for 39 years, when it was ended by his death (425 B. C.), and he was succeeded by his son Xerxes II. The reign of Artaxerxes is mostly filled with the exciting struggles of Bactria and Egypt above mentioned, but during such intervals of peace as were permitted to him, he gave his attention to the improvement of the political and social condition of his subjects. His memory is preserved in history as a prince of amiable manners, and noble and generous character. The Persian

dynasty was weakened rather than strengthened, however, in his reign. He refused, doubtless from politic considerations, to take any part in the Peloponnesian war, which was commenced during his reign, although solicited both by Athens and Sparta. Artaxerxes, on the authority of Josephus, the Septuagint, and the book of Esdras, is supposed to have been the Ahasuerus mentioned in Esther, who "reigned from India even into Ethiopia, over one hundred and seven and twenty provinces." II. ARTAXERXES, surnamed Mnemon, on account of his good memory, was eldest son of Darius II., and succeeded to the throne of his father 405 B. C. His younger brother Cyrus, governor of Asia Minor, claimed the throne, on the ground that he was the first-born of his father after his accession, and raised a revolt in his own favor. Artaxerxes quelled the revolt, took Cyrus prisoner, but spared him from death at the solicitation of his mother, and restored him to the procuratorship of Asia Minor. Cyrus, untouched by gratitude, raised a new conspiracy, which, under the command of Oecarchus, fought at Cunaxa, where both Cyrus and Oecarchus were slain, and from which point commenced the famous retreat, known in history as "the retreat of the Ten Thousand," and so Artaxerxes was put into quiet possession of the Persian throne (401 B. C.). (For a full account of this expedition of Cyrus, see the "Anabasis" of Xenophon.) This expedition, so disastrous to the conspiracy, was nevertheless the cause of a war which immediately after broke out between Persia and Lacedæmon. The position which the Lacedæmonians had assumed in the expedition by Cyrus was an abundant occasion for a renewal of hostilities on the part of Artaxerxes. Agesilanus, king of Lacedæmon, was placed by the ephori in command of the Spartan forces in Asia. At the most critical period of the expedition, just as Agesilanus, convinced of the internal weakness of the Persian dynasty, was preparing a descent upon the very heart of the empire, he was ordered home by the ephori to defend the country from a powerful league which had been formed through the intrigues of Artaxerxes with the Athenians, by appealing to their hatred of the Spartan influence among the Grecian states. This enabled Artaxerxes to give a successful issue to the war with Lacedæmon, ripened the combination of the Grecian states against Lacedæmon, and so hastened the decline of the Spartan power. Overwhelmed by these accumulated foes, Sparta consented to the humiliating peace of Antalcidas (387 B. C.), in which she resigned every thing at which the conspiracy of Cyrus had in the outset aimed, though the terms of the treaty were less disadvantageous to Sparta than to the other states. Evagoras, refusing his assent to the treaty which yielded up Cyprus to the Persian power, made a resistance of 10 years, and finally succumbed. Artaxerxes next prosecuted a war against the Cadusii, in person, and rendered them tributary. He next turned his forces against Egypt, but

failed through the unskilful management of his general, Pharnabazus. Twelve years later he renewed the attempt with the same result. He married 2 of his own daughters, and put to death his eldest son, having detected him in a conspiracy, and was succeeded at his death (which occurred 360 B. C., after a reign of 45 years) by his son Ochus. III. Ochus, on his accession, assumed the name of Artaxerxes. He was the 8d son of Artaxerxes II. He is remarkable in history for his cruelty and lack of principle. The principal event of his reign was the complete overthrow of the Egyptian power, and its subjugation to the Persian throne (364 B. C.). But it is recorded that he treated the Egyptian religion with such great disrespect in his triumph, that on his return into his own country he was assassinated by an Egyptian. This may not be true. The time of his death is generally set down 338 B. C.

ARTEDI, PETER, a Swedish physician, a contemporary and intimate of Linnæus, who bequeathed to him his literary property. He is known as a diligent writer on fossils and quadrupeds, and the works on these subjects, which he intended to publish, were completed by his friends, under the titles of *Bibliotheca Ichthyologica*, and *Philosophia Ichthyologica*. He was drowned at Leyden, 1785, in his 80th year.

ARTEMIDORUS OF EPHESUS, a Greek geographer who flourished partly in the 1st and partly in the 2d century B. C. He is said to have travelled in Iberia, and Gaul, to have circumnavigated the Mediterranean, and to have made voyages in the Red sea and the Indian ocean, that he might acquire a perfect knowledge of those countries and seas, and be able to correct the errors which former geographers had fallen into in describing them. The great work in which he embodied the fruits of his travels and observations consisted originally of 11 books. All of these have perished, save the fragments and extracts that Strabo, Marcion, and other ancient writers have preserved.

ARTEMIS, one of the superior divinities of the Greeks, corresponding with the Diana of the Romans. In Homer and Hesiod, she was the daughter of Zeus (Jupiter) and Leto (Latona), and the twin sister of Apollo, born with him at Delos. Like her brother, she is armed with a bow, quiver, and arrows, and sudden deaths of women are ascribed to her darts. In the Trojan war she sides with the Trojans, quarrels with Hera, who takes the bow from her back, and beats her with it. She is unmarried, and a paragon of chastity. She slays Orion with her arrows, and changes Actæon into a stag because he espied her bathing. In conjunction with her brother, she slew the children of Niobe, who had deemed herself superior to Leto.—The Arcadian Artemis was a goddess of the nymphs. She hunts on the Taygetan mountains, and was drawn in a chariot by 4 stags, with golden antlers.—The Taurian Artemis was a goddess hostile to strangers, who demanded the sacrifice of

all such people as were thrown on the coast of Tauria. Iphigenia and Orestes brought her image to Greece with them. The Taurian Artemis was worshipped at Sparta. Boys scourged themselves at her altar, until it was covered with blood.—The Ephesian Artemis, commonly known as Diana of the Ephesians, was entirely oriental. Her priests were eunuchs, and she was represented as many breasted. Artemis was also identified with Selene, the moon, by the Greeks. She is represented as a huntress, tall, and nimble. Her hair is partly tied up, and partly flows down her back; the well-shaped legs are bare to the knees. Her attributes are the bow, quiver, and arrows, or a spear, and stag, on which she sometimes rides cross-legged, and hunting hounds.

ARTEMISIA, a queen of Halicarnassus, who was contemporary with Xerxes. As a vassal of the Persian crown, she joined the expedition of that monarch against Greece, with a squadron of 5 ships. Before the battle of Salamis she made herself conspicuous by the wisdom of her counsel, and in that battle she made herself still more conspicuous by her skill and valor. She became enamored of a young Abydæan named Dardanus, who did not reciprocate her affection. This so enraged her that she caused him to be seized, and had his eyes put out; but afterward regretting her cruelty, she consulted an oracle as to how she should make atonement for her crime, whereon the oracle commanded her to hasten to Leucas, and cast herself into the sea, which mandate she obeyed.—ARTEMISIA, the widow and successor of Mausolus, king of Caria, celebrated for the excessive grief which she manifested at his loss. She employed the most eloquent rhetoricians of Greece to pronounce panegyrics in his honor, and raised a magnificent monument to his memory at Halicarnassus. She is even said to have mingled the ashes of her idol with her wine, and to have made this beverage her daily drink, that she might the sooner die and meet him.

ARTEMISIUM, the name of several places in ancient geography. The most important of them is the northern coast and promontory of Eubœa, off which the Greek ships fought with the fleet of Xerxes, 480 B. C. The name is derived from a temple of Artemis, or Diana.

ARTEMON. I. A theologian who flourished about A. D. 280, and was the founder of a sect called the Artemonites, who held that Christ was a mere man, only better than other men by his superior virtues. The doctrine of the Artemonites was later revived by Paul of Samosata, and many others have taught it, from time to time, to the present day. II. A painter of some note near the time of Alexander the Great. III. A sculptor, who, according to Pliny, made statues for the palace of the Cæsars.

ARTERY. Arteries and veins are two orders of blood-vessels which unite in their peripheral extremities called capillary vessels, and also in the heart, which is their common cen-

tre. Arteries carry blood from the heart to every organ in the body, and veins bring back the blood from every organ to the heart.—There are two complete rounds of circulation in the human body, one termed pulmonary, and the other general or systemic. In one, the blood is carried from the heart into the lungs, to be there purified by the exhalation of carbonic acid gas, and the inhalation of pure air, and then returned to the heart for general circulation and nutrition. The pulmonary arteries, therefore, carry impure blood from the heart to the lungs, and the pulmonary veins return pure blood to the heart. In the general circulation this order is reversed; the arteries convey pure blood to all the organs, and the veins return dark, impure blood to the heart, to be again sent through the lungs for purification and regeneration.—Arteries and veins are somewhat different in structure. The walls of arteries are relatively strong and elastic, remaining firm, cylindrical, and open, when divided, while the walls of veins are thin, and easily collapse when empty. The walls of arteries are composed of 3 coats, the middle coat being very strong, the others membranous and less elastic.—The arteries pulsate in every part of the body, as the heart impels new volumes of blood through them at every pulsation. They terminate in minute capillary vessels, which supply the organs with new blood, and then pass into the veins to carry off the impure blood returned in exchange. The terminations of the arteries are termed arterial capillaries, and the beginnings of the veins, venous capillaries, the word capillary in both cases denoting the hair-like fineness of these minute vessels.—Blood is impelled through the arteries by the contractions of the heart, in the first instance, and by the natural elasticity of the arterial walls, as it proceeds; but in the veins the blood is forced onward by the pressure, and the movements of contiguous organs on the walls of the veins, and also by a partial vacuum and power of suction in the heart itself, produced by the alternate emptying and filling of the auricles and ventricles of either side. The movement of the blood within the veins is not so vigorous, however, and valves are placed in many parts to check the backward flow, which may at times arise from want of external pressure, or sufficient central and internal suction to carry it steadily forward. No valves exist in arteries, as no such backward flow occurs, except at the mouth of the aorta, where a temporary backward flow occurs, as the left ventricle expands to receive a new supply of blood from the left auricle above.—Arteries are subject to disease and dilatations which form pulsating tumors of a dangerous kind, technically called "aneurisms." The wounds of arteries are also very dangerous, from the rapidity with which the blood gushes from the wound. The proper modes of stopping hemorrhage from a wounded artery are pressure, twisting of the bleeding vessel, and ligature above the wound.

ARTESIAN WELLS. These are so named from the province of Artois in France, anciently called Artesium, in which they have for a long time been in use. They appear to have been known to the ancients, being occasionally alluded to by some of their writers. The Chinese also used them at an early period. Artesian wells are small holes sunk in the earth by boring, through which currents of water, struck at great depths, rise toward the surface, and sometimes flow over. Water thus pressed up must have its source in some more elevated lands, and be confined in the strata of rock, through which it has percolated; precisely as water is conveyed in pipes below the surface, and is pressed up into our houses to a height nearly equal to that at which the pipes commenced. Water finds its way down into the earth by flowing into the crevices and chasms of the rocks, and by percolating through the porous strata. In a region of limestone rocks it hollows out for itself its own bed, by dissolving the limestone, and even in this way produces great caves. The large streams that flow through these, and the innumerable little subterranean rivulets circulate between the layers of rock, seeking constantly lower levels. When forced by the pressure behind, they are pushed up through any apertures they meet, or that are opened for them, and flow out as springs or as artesian wells. To sink a well of this kind, therefore, with a reasonable prospect of bringing up a supply of water, it is essential that the spot selected should be of a lower level than other lands in the vicinity, though these higher lands may be several miles off. The strata of rock also should be inclined toward the lower level; for if the dip should be in the opposite direction, the probability is that the waters would find their way down the slope instead of across the layers. In almost all groups of stratified rocks, some of the strata are impermeable to water; down these the waters must flow as upon a tight floor. In a region of unstratified rocks, or where the strata are greatly disturbed, and lie in irregular positions, much uncertainty must attend the sinking of these wells. But by going to very great depths, wherever the surface is lower than that of the country around, there is a strong probability of striking water that has its source at a higher level. Underground currents are met with frequently at different depths, confined between different strata of rock, and having no connection with each other. If the first supplies struck do not rise to the desired height, the boring is continued in search of others below that will. It is sometimes the case that the head of water is at so high an elevation, that the column bursts forth from the ground as a fountain, throwing up a continual jet d'eau. The principle is precisely that of our artificial fountains. By raising the water above the surface in a pipe, and letting it flow over, convenient water-power is obtained. Artesian wells are applied to this purpose at many localities in

France, the quantity of water they supply being found sufficient to run heavy machinery.—These wells are particularly valuable in a region where water is difficult to be obtained. Upon arid plains and prairies on limestone formations through which the surface water soon finds its way and is lost, they are of great importance. The natives of some parts of the desert of Sahara have sunk them with success to the depth of 1,200 feet. Their successful introduction in the dry limestone region of Alabama, will no doubt be followed by their general use in similar localities throughout the western states.—From the great depth at which the currents of water are reached, their supplies may be regarded as permanent, provided so many wells are not sunk in the same neighborhood as to endanger exhausting the largest reservoirs. In the vicinity of London it is observed that the height to which the waters rise, diminishes as the number of the wells is increased. In 1838, the supply of water from them was estimated at 6,000,000 gallons daily, and in 1851 at nearly double the amount, and the average annual fall of the height of the water is about 2 feet. But in cases of single wells, the supply of water or the height to which it rises is seldom known to vary. One at Lillers (Pas de Calais) has been in steady operation since the year 1126. By their depth, also, the water brought up is warmer than that found near the surface. This increase of temperature with the depth takes place at different rates in different places. At Paris, where the mean temperature at the surface is $10^{\circ}.6\text{ C.} = 51^{\circ}\text{ F.}$, the water of the artesian well of Grenelle is 82° F. from a depth of 1,797 feet, which is about 1° F. for every 58 feet deep. At St. Louis, the temperature of the water at 1,515 feet is $18^{\circ}.18\text{ F.}$ higher than the mean temperature at the surface, making the increase 1° F. for every 83.8 feet descent. At Charleston, S. C., the temperature of the water at the surface is 68° F. ; at 500 feet it is $73^{\circ}.5\text{ F.}$; at 1,000 feet, 84° ; and at 1,106 feet, 88° . The average rate of increase is about 1° F. for every 52½ feet, as stated by Prof. Hume, of the state military academy.—The hot springs that flow out to the surface in many parts of the world, are natural artesian wells rising from great depths. In Virginia these springs are found along the lines of great faults or breaks in the stratification of the rocks, by which formations, usually separated by thousands of feet, are brought into contact with each other.—Warm waters obtained by artesian wells have been applied to useful purposes connected with manufacturing. They are especially valuable where pure water of a uniformly warm temperature is required. In Wurtemberg, large manufactories are warmed by the water being sent through them in metallic pipes. A constant temperature of 47° is thus maintained when the temperature without is at zero. Hospitals and greenhouses are also kept warm in the same manner.—The strata of clays, sands, and limestones, which form the

tertiary basins of London and Paris, are particularly well arranged for furnishing water by artesian wells. Covering areas of many square miles, the slope of the strata is toward the centre of the basin, and here, at the depth to which these reach, the waters must collect in large quantities. The strata, moreover, are not difficult to penetrate by boring. In these basins are concentrated the greatest number and the most expensive of these wells. That of Grenelle in the Paris basin is famous as the deepest among them. It was commenced in 1833 with the expectation of obtaining water at 1,200 or 1,500 feet, in the secondary green sand formation, which underlies the chalk—the uppermost member of this series. The boring was commenced with an auger of 1 foot diameter. At 500 feet it was reduced to 9 inches; at 1,100 feet to 7½ inches; and at 1,300 feet to 6 inches. Years passed as this work went slowly on under the direction of the government. By various accidents it was retarded for months at a time. At the depth of 1,254 feet, the tubing broke off, and fell with 270 feet of rods to the bottom of the hole. Fifteen months were spent in breaking these and extracting them in pieces. At 1,500 feet the government would have abandoned the enterprise, but for the urgent appeals of M. Arago. It was continued till, on Feb. 26, 1841, at the depth of 1,792 feet, the boring rod suddenly penetrated the arch of rock over the subterranean waters, and fell several yards. In a few hours the water rose to the surface in an immense volume, and with great violence, bringing up sand and mud. To check the supply, it has been found necessary to raise a vertical pipe many feet into the air, in which the water rises and flows over. Its temperature is uniformly 82° F. The extreme depth is 1,806 feet. The water is perfectly limpid, and flows at the rate of 500,000 gallons in 24 hours. This is the well that is made use of for warming the hospitals at Grenelle.—A deeper well than this was completed at Kissingen in Bavaria in 1850. It is 1,590 feet in sandstones, 150 in magnesian limestone (Zechstein), and 188½ in rock salt. At the depth of 1,878½ feet, the water burst forth in a column 4 inches in diameter, and rose 58 feet above the surface, spreading out like a palm tree at the top of the jet. Its temperature is 66° F., and it is charged with 8½ per cent. of pure salt, and discharges 100 cubic feet per minute. There are saline chalybeate springs in the vicinity, from which 500,000 bottles are annually exported; and it was for salt water that this well was sunk. Its whole cost has been £6,666. Another well at Münden, in Hanover, has reached a still greater depth; but the water rises to an elevation above the surface of only 15 feet, and is not so intensely salt.—Artesian wells sunk for bringing up salt water are common in the United States, especially in New York, Pennsylvania, and Virginia. The deepest well in this country, and it may be in the world, is that sunk at St. Louis by the Messrs. Belcher, for their sugar refinery. It

was commenced in the spring of 1849, 800 feet distant from the bank of the river, and 420 feet above the level of the sea, in the carboniferous limestone formation. An interesting account of its progress is given by A. Litton, M. D., in the "Transactions of the Academy of Science of St. Louis," vol. i, no. 1, 1857. The boring from the bottom of an open well 80 feet deep, was continued by hand power through 219 feet of calcareous strata, the diameter of the bore being 9 inches. In Sept. 1850, steam power was employed. In Sept. 1851, the bore was contracted at the depth of 457 feet to 8½ inches. In April, 1852, the sinking was stopped a few weeks to enlarge the bore of the first 80 feet to 16 inches, for the purpose of putting in a large pump and testing the water. The bore was then enlarged to 5½ inches, from the depth of 457 feet to 1,050 feet, and a 4-inch tube put in to hold up the shales of the last 150 feet. The sinking was then continued with a 3½-inch bore till March 12, 1854, when the depth of 2,199 feet was reached, and the work stopped in silicious and clayey beds belonging to the lower silurian formation. The strata penetrated were alternating limestones, shales, sandstones, with a few beds of chert rock and marls, which, by Dr. B. F. Shumard, of the state geological survey, are supposed to represent the Chemung group, the Hudson river slates, and the Black river and Trenton limestones. Below these, from 1,515 feet, is a stratum, about 100 feet thick, of a white soft sandstone, which appears to be the water-bearing stratum. This comes to the surface in the counties to the west and south of St. Louis, dipping toward the city. The water is discharged through a 20-inch pipe bolted to the rock, and flows over regularly at the rate of 75 gallons per minute. Its temperature is 78°.4 F. The mean temperature of the place being 55°.22 F., the increase to the depth of 1,515 feet is equal to 1° F. for every 38.8 feet of descent. The water proves to be unfit for other than medicinal purposes, having a strong odor of sulphuretted hydrogen, and a salty taste. Its specific gravity at 47° F. is 1.0068; and the composition of its solid constituents is thus given by Dr. Litton, 1,000 parts of the water yielding 8.791 of solid matter.

	In 1,000 parts.
Carbonate of protoxide of iron, . . . . .	.0094
Carbonate of lime, . . . . .	.1893
Carbonate of magnesia, . . . . .	.0182
Chloride of calcium, . . . . .	.4944
Chloride of magnesium, . . . . .	.6946
Sulphate of lime, . . . . .	.8156
Chloride of potassium, . . . . .	.1609
Chloride of sodium,	6.3758
Silica, . . . . .	.0094
Sulphuretted hydrogen, . . . . .	.014056
Free carbonic acid, . . . . .	.0558
	8.721656

The drills used in this work were of simple wedge-shape for soft rock, and four-square for hard rock. They screwed into an iron rod 30 feet long and 2½ inches in diameter, weighing about 600 lbs. This was screwed to a pair of slips, by which arrangement the drilling was effected by

the weight of the bar alone. The main rods were hickory poles made of 2 pieces, split and joined together; the lengths were about 30 feet each. They were suspended to a spring beam worked by a steam engine running 80 revolutions in a minute, and giving a stroke of 14 inches. The turning of the rods was done by hand. Four men were required to carry on the operation. The time actually spent upon the work was only 38 months; the whole cost is stated by Dr. Litton to have been not less than \$10,000; but by later authority it appears to have exceeded double this amount. It may with propriety be referred to as an example alike honorable to the proprietors and to the country itself, of a great undertaking being successfully carried to its termination by individual enterprise and perseverance, without government aid.—Of all the wells sunk in the United States, none are so remarkable for the difficulties encountered and successfully overcome as that at Charleston, S. C. Since the year 1824, no less than 5 attempts have been made by the city government to obtain good water by this means. In 1848 the last operation was commenced under the direction of Maj. Welton, who had had much experience in sinking artesian wells in Alabama. The strata first penetrated were alluvial sands, saturated with water, which caused them to run as quicksand. These were shut out by cast-iron tubing of 6 inches diameter, which penetrated the clays and marls of the postpleiocene formation, and finally reached the depth of 280 feet, where it rested upon a rock of the eocene formation. From this point down, alternations of hard rock and loose sands were met with, the latter causing the same trouble as those above, running in and filling the well, sometimes even to the height of 140 feet up from the bottom in a single night. When it was found impossible to draw out the sands from these beds, the plan was adopted of shutting them out by tubing. The bore of the lower part being first enlarged from $3\frac{1}{2}$ to $5\frac{1}{2}$ inches, was lined with sheet-iron tubes to the depth of 700 feet. Sand flowing in at 1,030 feet rendered it necessary to take out the thin tubing, and replace it with heavier tubes of 4 inches diameter, and $\frac{1}{4}$ of an inch thick, which screwed one upon another; this was done to the depth of 1,103 feet. The sinking was extended, of 8 inch bore, to 1,250 feet, the last strata being sandstones, sand, and marls, probably of the cretaceous formation. The discharge, 10 feet above the surface, is about 1,200 gallons an hour. The water is saline, and disagreeable to the taste, but soft. Its temperature is 87° . It is used for steamboats, and the demand is such that another well, 30 feet distant, was commenced in February, 1856, which it is intended shall be carried down of 1 foot bore. This has already reached the depth of 950 feet. By the use of steam power the work is much more rapidly carried on than was that of the old well with horse power. The whole cost to the city, of both wells, has thus far been about \$35,000.—In New York city, artesian

wells were sunk years ago by Mr. Levi Disbrow, and the business has since been continued to the present time by his son, Mr. John Disbrow. The structure of the island is exceedingly unfavorable for very successful results to be expected from these enterprises, the strata being nearly vertical, and separated from all more elevated districts by deep salt water channels. The supply of fresh water likely to be met with below the surface cannot therefore be very large; nor can it, for want of sufficient head, rise to any great height in the wells. One of the oldest and deepest of these wells is at the United States hotel, known, when the well was sunk, as Holt's, between Pearl and Water streets. The boring for the first 126 feet was in stratified sands, and blue clay alternating with river mud. At this depth the surface of the rock was struck under a bed of coarse gravel; and below this the shaft was continued in the gneiss rock 500 feet farther. The upper 200 feet of the well was bored 8 inches in diameter; the remainder was $2\frac{1}{2}$ inches. The water for a time was tolerably good, but soon became impregnated with the salt river-water, until it was at last rendered unfit for use. At the corner of Bleeker street and Broadway, a well was sunk 448 feet, of 7 inches bore—the first 42 feet through sands and gravel, and 406 feet through the hard gneiss rock of the island. The water, as stated by Mr. Levi Disbrow, rose within 30 feet of the surface, and to the amount of 120,000 gallons in 24 hours. At the dry dock, 11th street, East river, the rock, met with at 180 feet, was penetrated 200 feet further. Many other wells of this nature have been sunk in and near the city, but with no features of particular interest.—The attention of the United States government has recently been directed to the subject of supplying water to the vast plain of Llano Estacado, by means of artesian wells. This plain, in the 32d parallel of latitude, lying between Arkansas and Missouri on the east, and Mexico and the Mesilla valley on the west, would, if supplied with water, afford a route to the extreme south-west, some hundreds of miles shorter than any other. It is covered with a hardy, nutritious species of grass, which the cold of winter cannot destroy, and thus pasturage for cattle through the whole year is furnished. In order to open this communication, the war department, in 1855, sent out a party under the direction of Capt. Pope, for the purpose of sinking artesian wells. His first encampment was upon the bank of the Pecos river, in the 32d parallel of latitude. At the distance of 15 miles due east from this point, he sunk the first well. The geological formation he found favorable for his work. The alternating strata of indurated clay and cretaceous marls were easily bored through, and yet were sufficiently hard to prevent the walls from falling in. At the depth of 360 feet, the first stream of water was struck, which rose to the height of 70 feet in the tubing. At the depth of 641 feet, the second

stream was struck, which rose 400 feet in the well. Five miles eastward from this point, in the succeeding year, he sunk a second well. Here he struck the same streams which he had before found, and at the depth of 860 feet he struck another which rose to the height of 750 feet in the tubing. Having experimented thus far, he was obliged to suspend his labors, as his materials were exhausted; but enough has been done to show the practicability of supplying water to this great plain by the method proposed, and it is to be hoped that at no distant day congress will make further appropriations, and that the work may be successfully completed. —There is a class of wells to which the name negative artesian wells, or drain wells, has been given, that are sunk to convey away surface waters into some absorbing stratum. They are of service particularly about manufactories, from which large quantities of impure liquids are discharged, the flow of which upon the surface might prove a nuisance. If there is reason for believing in the existence of any sandy stratum below the surface, or one of limestone, which usually abounds in fissures, a well of this kind may be sunk with reasonable prospect of its answering the desired purpose. —The process of sinking artesian wells is called boring. It is conducted by augers or drills attached to the end of an iron rod, and this connects by screws to another rod, and so on to any length required. To the upper end of the rod a transverse handle is attached, by which the instrument is partly turned round by 2 men at each time it is raised and dropped. The cutting edge of the auger or drill thus chips a fresh line across the bottom of the hole at each blow. The blow is given by the rod falling by its own weight after it is lifted a few inches. The lifting is done by the men at the handle assisted by another one at a higher elevation, who vibrates a long horizontal pole fastened at one end in a pile of stones, to the middle of which the rod is suspended by a chain. The vibration of this elastic pole lifts and drops the rod, and the workmen turn it by the transverse handle. As the rod becomes heavier with its increasing length, other contrivances are adopted for raising it; as by a windlass in the place of the pole, a rope being coiled round it, one end of which is held fast by a laborer as the windlass is turned, lifting the rod hung on the other end. By letting go the rope the coil unwinds, and the rod falls; another expedient is by cams attached to a windlass. But the weight of the rods becomes at last too heavy to be raised by men, and machines are contrived to be worked by horse power. At the well of Grenelle it required 8 horses to work the whim or machine for lifting out the rods. As the hole is carried down, it is necessary in most situations to protect its sides with tubes of wrought-iron. Sometimes tamping with clay answers the purpose near the surface. A set of these tubes is sent down one on another in lengths of about 6 feet, one screwing into

another, or attached together by a collar. If a second set should be required at a lower depth, it must be of a less diameter so as to go through the former, or this must be all drawn out with instruments prepared for this purpose, and the hole enlarged. The various kinds of instruments employed for sinking the hole, enlarging it, raising out the material as it accumulates, and for breaking up the instruments themselves, or the rods that may become detached and drop in, are too numerous and of too complicated forms to be described without drawings; and the same may be said of the various operations connected with the sinking of the holes. The well-known slow progress of the work is owing to the time required for drawing out the whole length of rods to discharge the ground-up fragments that collect in the bottom of the hole. This must be done with every few inches sunk, or even oftener than this; and as the work used to be conducted, it was necessary, after drawing out all the rods to which the drill was attached, to send them down again with a cylindrical spoon, gathering up the fine fragments. This was then lifted out, each length of rod unscrewed as it came up, and then the whole returned with the drill to recommence the sinking. The length of time consumed by occasional accidents has been already referred to in the account of the Grenelle well. An improved and more simple process has been introduced, taken from the Chinese, by whom it has been in practice from time immemorial. Their artesian wells are wonderful for their depth and numbers. The missionary Imbert stated, in 1827, that in the province of Ou Tong Kiao, in a district 10 leagues long and 4 leagues wide, these wells may be counted by "tens of thousands," sunk at very remote periods for the salt water and bituminous matters which come out with the waters. These products are met with at the depth of nearly 1,800 feet; and some of the wells that had lost them, have been carried down even to 3,000 feet. From this enormous depth currents of carburetted hydrogen come up in such quantity, that this is used by its combustion to furnish heat for evaporating the salt water. Instead of using rods to sink these wells, the Chinese suspend the cutting drill, which is attached to a heavy metallic rod 6 feet long and 4 inches in diameter, by a rope or chain which passes over a wheel. Around the drill is a cylindrical chamber, which, by means of simple valves, takes up and holds the broken fragments. As the rope is raised and dropped, it gives by its torsion a turn to the drill, causing it to vary its position at each stroke. When the cylinder requires to be discharged, it is easily wound out by a windlass or horse-whim. The rope is protected from wear by knobs of wood attached to it at intervals. This principle has been successfully applied in Germany to sinking holes for ventilating mines. With large drills 18 inches in diameter, a hole of this size has been carried down several hundred feet deep. It might also be well applied

to exploring for mineral veins and beds of coal, as is now sometimes done with the more expensive process. We have authentic accounts that in France by this new method an operator, M. Collet, contracts to sink wells in the chalk formation as deep as desired at 9 francs the running metre, which is 51 cents the foot. His apparatus costs only \$100. With the aid of 9 workmen he sinks at the rate of 25 to 85 feet a day in the chalk. He has already sunk near 100 wells, each of which has furnished pure water at an expense not exceeding \$80. With such results it may well be regarded as extraordinary that the old process still continues in general use. The objections to the process suggested by Burat, in his *Géologie Appliquée*, are that the rope is liable to break, that stones are liable to fall in and obstruct the operation, and that there is danger of the apparatus deviating in soft strata from a vertical course, thus rendering the tubing impracticable.

ARTEVELDE. I. JACQUES VAN, a citizen of Ghent in the 14th century, famous as a leader in the popular tumults of the time, and who became the absolute governor of Flanders, driving Count Louis of Ocrey into exile. He was of a very distinguished family, but caused himself to be enrolled in the guild of brewers in order to acquire popular influence. By his great riches, talents, and eloquence, he soon became a popular idol, and was chosen by 50 other corporations, beside the brewers, as their leader. He appears to have governed with despotic spirit, and according to Froissart, "he had in every town and castlewick through Flanders, sergeants and soldiers in his pay to execute his orders, and serve him as spies, to find out if any were inclined to rebel against him, and to give him information. At the same time he banished all the most powerful knights and esquires from Flanders, and such citizens from the principal towns as he thought were least favorable to the earl; seized one-half of their rents, giving the other moiety for the dower of their wives and support of their children." So formidable was the power of Artevelde, that his alliance became an object of great interest to Edward III. of England in his designs on France, and the protector, or *Ruwaert*, as Artevelde was styled, became a most intimate friend of the monarch, who sent ambassadors to solicit his alliance. It was at Artevelde's instance that Edward added the French lilies to the royal arms of England, and styled himself in addition to his proper title, king of France; which assumptions were continued by the British sovereigns until the union with Ireland. The reason of this pretension on the part of Edward was doubtless to secure the allegiance of the Flemings, who had vowed not to make war against France. Their scruples were overcome, but the British invasion not being successful, Artevelde began to dread the vengeance of the count of Flanders. In order to secure the protection of England he endeavored to induce the people to expel the counts from the succession, and ac-

knowledge the Black prince, the son of Edward, as their sovereign. This excited a tumult which Artevelde in vain endeavored to pacify, and he was massacred in his own house in 1345, after 10 years of power. II. PHILIP VAN, the son of the preceding, was named in honor of Philippa of Hainault, queen of Edward III., who stood godmother at his baptism. In 1382, nearly 40 years after the death of his father, when war had again broken out between the men of Ghent and the count of Flanders, the people remembering the former services of Jacques van Artevelde, sought his son, carried him to the market-place, and by acclamation chose him *Ruwaert* or governor. It is said that one of his earliest acts when in power was to revenge the death of his father, by putting to death 12 of the principal conspirators against him. He at once engaged vigorously in the war, and at the head of 5,000 men marched against Bruges, before which city he encountered the count of Flanders, and totally defeating his army, entered the place. He sent off to Ghent 500 of the principal citizens of Bruges as prisoners, and the count of Flanders himself escaped with great difficulty. The booty which fell to the men of Ghent proved of immense value, gold, silver, jewels, and precious stuffs being found in such quantities, that for a fortnight 200 carts were constantly occupied in transporting the pillage from Bruges to Ghent. All the towns in Flanders excepting Oudenarde submitted to Artevelde, who assumed the style of a sovereign prince, living on his return to Ghent with great magnificence, giving rich and costly banquets, and adding to his name the title of *Regard de Flandres*—the overlooker of Flanders. Among the articles with which Artevelde enriched the city was the golden dragon of Bruges, as large as an ox, which, for a long period afterward, surmounted the belfry of Ghent, and was said to have been brought from Constantinople by the Flemings, who followed the fortunes of Baldwin, count of Flanders, during the 4th crusade.—While besieging Oudenarde some of the men of Ghent having destroyed several towns on the frontier of France, the duke of Burgundy instigated Charles VI. of France to take up arms against Artevelde, and in favor of his vassal, the count of Flanders. Artevelde endeavored to propitiate the French monarch, but without success, and he then despatched ambassadors to England to solicit aid, and obtain the payment of 200,000 crowns, which Jacques, his father, had lent to Edward III. 40 years before. Failing in these requests, and several of his letters to the French sovereign having been treated with contempt, Artevelde prepared for war, while a French army under the command of Oliver de Olisson, the constable of France, marched for Flanders, the young king Charles VI. taking part in the expedition. Peter du Bois, one of Artevelde's commanders, was defeated by the French, who slew a large number of the Flemings, and the town of Ypres surrendered to

Charles without striking a blow. Finding that difficulties were thickening around him, Artevelde determined to risk a general action with the French, and encountered them Nov. 27, 1382, at Mont d'Or, near Ypres. He was totally defeated, slain after fighting bravely, and the army he had brought into the field was scattered, leaving 25,000 dead. The combat, styled the battle of Rosbecque, scarce lasted an hour. The body of Artevelde was found, and no wounds being discovered, his death was by some attributed to suffocation from the pressure of the throng during the flight, and after being stripped it was left suspended to a tree. The fortunes of Philip van Artevelde have formed the subject of an elegant dramatic poem, by Henry Taylor, of England.

ARTHRITIS (Gr. *arthritis*, articulation or joint). This word is technically used to denote inflammation of the joints, of which there are 3 kinds, i. e. traumatic arthritis, rheumatic arthritis, and gouty inflammation of the joints. For the 2 latter varieties, see **RHEUMATISM** and **GOUT**. Traumatic arthritis is a frequent complication arising from wounds or bruises, contusions and surgical operations in or near the articulations. Acute inflammation of the articulation sometimes occurs also, without external cause, from the absorption of pus or morbid matter within the system. Women suffering from recent childbirth, or persons affected with phlebitis, blennorrhagia, or purulent infection, are liable to suffer from arthritis. Blows, falls, sprains, violent distension of the joint, fractures and wounds made by sharp instruments, may all produce acute inflammation in the joints.—All the parts of the joint may be involved, or some of the external or internal tissues only, for the intensity of the inflammation is much greater, when the capsule of the joint is lacerated and admits the air. During the first day or two, the case may seem very simple and without danger to the patient, but often on the third or the fourth day, or even later, the symptoms become more severe, and the pain excessive.—Traumatic arthritis is sometimes so severe as to derange the general health profoundly, causing delirium and convulsions; the skin is burning hot, the tongue is red, bile is vomited, and the patient suffers much from bodily pain and mental anxiety. Suppuration is the usual termination of this kind of inflammation. The prognosis is sometimes favorable, and sometimes not. When traumatic arthritis is superficial, it is easily cured; but when deeply seated and admitting air into the joint, it is a serious disease. In traumatic arthritis, the proper treatments consist of cloths and compresses steeped in cold water, and placed around the inflamed parts; gentle, passive movements of the joint; rest for the whole body, and particularly for the implicated limb; cooling diet, with appropriate sedatives and other medicines. Cupping and leeching are sometimes useful; and where suppuration has commenced, it is commonly more prudent to allow it to form its

own opening for evacuation, than to make an incision which may give rise to serious complications.

ARTHUR. The life and deeds of this ancient British hero, if indeed there ever was such a person, have been so involved in fiction, that it is not easy to give other than a mythological account of him. Nennius and Geoffroy, the most ancient Cymric poetry, the Triads, the poems of Llywarch Hen, and of Taliessin, speak of him as a prince and warrior, but not greatly superior to others of his contemporaries. His exploits occurred in the beginning of the 6th century. Nennius says that he gained 12 victories over the Saxons. Oerdio the Saxon was his great opponent, and his efforts were chiefly directed toward confining the Saxon within the then limits of Wessex. Modred, his nephew, revolted from him, which brought on the fatal battle of Camlan in Cornwall, in 543. Modred was slain, and Arthur mortally wounded. He was conveyed by sea to Glastonbury, where he was buried. Tradition preserved the place of his burial, and the tomb was opened by order of Henry II., in the 13th century. Giraldus Cambrensis, the historian, was present, and saw the bones and sword of the monarch, and a leaden cross let into his tombstone, with the inscription, in rude Roman letters, *Hic jacet aspullus inclitus rex Arturus in insula Avalonia*. The British Celts long believed that he would some day come back and lead them on again to drive the Saxons into the sea, and vindicate for the Celtic race the undivided sovereignty of Britannia. The Arthur of romance is the son of Uther Pendragon, by Igera, wife of Gorlois, duke of Cornwall, and owed his birth to a magical device, by which Uther, assuming the form of the lady's husband, obtained access to her. At the battle of Mount Badon he slew 470 Saxons with his good sword Caliburn and his lance Rou. He also drove the Scots and Picts back to their highland fastnesses. He destroyed the Pagan temples of the Saxons, and restored Christianity; the following year he conquered Ireland in a shorter time than Cromwell did, and not content with Erin, passed over to Iceland and annexed it. Then he spent 12 years in peace. Ten years more were occupied in conquests made in Norway and Gaul. Returning to Britain again, he held a great gathering at Caerleon, in Monmouthshire, where tributary kings in scores attended him. The Romans demanded tribute of him, and to chastise their insolence, like Dathi of Ireland, he rushed through Gaul impetuously, and was preparing to cross the Alps, when the revolt of his nephew Modred, who had allied himself with the Saxons, Scots, and Picts, recalled him. The story of his death in the romances is not different from that detailed above, as the nearest approach to historical verity. Britain, both north and south of the Tweed, abounds in memorials of Arthur; there are Arthur's Seat, Arthur's Round Table, Arthur's Castle, and the constellation (Telyn Arthur)

Arthur's harp. His name is most frequently found in Wales.

ARTHUR, RICHARD, a British vice-admiral, born 1778, died at Plymouth, Oct. 26, 1854. He was from his earliest youth connected with the naval service, and gradually rose from a captain's servant to the rank of a commander. This was conferred upon him in 1805, on occasion of his capturing 4 Spanish schooners in the gulf of Maracaibo, and on his cutting out another of the hostile boats from under the batteries of Santa Marta. During the Scheldt expedition of 1810, he gave another evidence of his courage by running in under the batteries of Dieppe, and attacking 7 lugger privateers, one of which he succeeded in bringing out. This daring exploit led to his promotion to post rank, and he was appointed vice-admiral in 1858.

ARTHUR, TIMOTHY SHAY, an American author, born near Newburg, in Orange county, N. Y., in 1809. He was about eight years of age when his parents removed to Baltimore, and his boyhood was passed with but few privileges of education. He was apprenticed to a trade, was for several years a clerk, and in 1833 visited the West as agent of a banking company. Meantime he had entered upon a course of reading and study, and upon his return to Baltimore became connected with a newspaper, and began to publish a series of short novels. His productions are numerous, consisting chiefly of works of fiction of a domestic character, written with a moral aim. They have been widely circulated in the newspapers and in cheap editions, and have been received with popular favor. For several years Mr. Arthur has also been actively engaged in the profession of journalism.

ARTHUR'S SEAT, a hill in the vicinity of Edinburgh, from the summit of which tradition says that King Arthur beheld the country, and near which he defeated the Saxons. The rocky point with which it terminates rises 822 feet 8 inches above high-water mark at Leith. From its peak the traveller may survey the centre of the kingdom, and obtain a complete view of Edinburgh, the whole forming a landscape hardly to be surpassed in Great Britain.

ARTHUR'S STONE, an enormous block of millstone on the summit of Cefu Bryn, a hill of Wales, Glamorganshire. It is 14 feet in length, and 7 feet in thickness, resting on 8 supporters, and is mentioned in the Welsh Triads as one of the 8 most stupendous works in Britain.

ARTICHOKE, (*cynara scolymus* and *cynara hortensis*), the green and globe artichokes of the gardens of Europe and America. They were known in the south of Europe as early as 1548. These plants resemble large thistles—the portion eaten is the under side of the head before the flower opens. The whole head is removed and boiled, the leaves laid aside and the bottom eaten, dipped in butter with a little pepper and salt. A sauce made of butter and spices is fre-

quently used. The French sometimes gather the heads when not larger round than a dollar, eat the lower end of the leaves raw, dipping them in oil, pepper, and vinegar. The globe variety is generally preferred by gardeners. Artichoke seed should be sown in a gentle hot bed, or warm open border as early in the spring as frost will permit. The plants should be set at a distance of 4 feet apart each way, in a stony soil, well prepared. They will bear heads the succeeding year. Some gardeners place 6 plants in a hill, making the hills 6 feet apart. Artichokes may be raised from sets or shoots which so often occur in old plants. They should be removed and carefully transplanted. As often as heads are removed from a plant it should be broken down to encourage the growth of new shoots. In autumn all plants should receive a good supply of earth or litter. Stable dung is too heating, and should never be employed. In the spring remove the autumn covering and take away all offsets except two or three of the best. During the first season the young plants of the previous year will produce heads from June till October. In succeeding years they will give heads from May until June or July. To have them the whole season, an annual plantation must be made. The flowers of the artichoke have the property of rennet in curdling milk. The French use the heads of the second crop of artichokes when dried, baked in meat pies with mushrooms. Artichoke heads are sometimes made to grow larger by tying a ligature tightly around the stem 8 inches below each.—The JERUSALEM ARTICHOKE (*helianthus tuberosus*, order *compositæ*) is not a true artichoke, but the root of a species of sun flower. In Italian it is named *girasole*, or sun flower, and in English it is corrupted into Jerusalem. In America it is sometimes known as Canada potato and Virginia potato. It was well known in England as an edible root, about the year 1620, having found its way thither from Brazil. The tubers are good for swine and cattle, they are capable of resisting the severest degree of cold when left in the soil the whole winter; being lifted in spring they form excellent food for stock. The Jerusalem artichoke may be grown in all classes of soil, and when grown in light sands and gravels, swine are allowed to dig the tubers for themselves. It is difficult to eradicate this plant from the soil, and it is seldom entirely removed where once rooted in a rich soil. The tops cured in autumn form an excellent hay, yielding 5 or 6 tons per acre. Sandy soil of fair quality is said to yield from 1,200 to 1,500 bushels per acre. They are not quite as nutritious as the potato, containing 72.2 per cent. of water, being about 4 per cent. more than is contained in the potato. Thomas Noble, of Massillon, Ohio, planted artichoke tubers in drills 2½ to 3 feet apart, using a little more seed per acre than for potatoes—result 1,500 bushels per acre—fed to sheep. Tops out and cured in October were preferred to corn fodder. Cordage is sometimes made out of the tops, and in

the south of Europe a kind of coarse cloth is manufactured from them. The farmers of America would do well to turn their attention to this root as a valuable adjunct to the feeding department of the farm.

ARTICLE, in grammar, the first part of speech. It is used before nouns, and makes them either definite or indefinite in their signification. In the English language *a* is the indefinite, *the* the definite article. There are traces in all languages which show that the article was originally a pronoun. The Greek and the German decline the article, in the 8 genders, and in all the cases; the Latin language does not use it at all. The Greek language has no indefinite article.

ARTICLES OF FAITH, concise statements of tenets held and promulgated by any religious body, assent to which is the condition of church fellowship. The Protestant church distinguishes the articles of faith into fundamental and non-fundamental (terms first used by Hunnius, 1626), making faith in the fundamental alone essential to salvation. Articles of faith are of progressive growth. It does not appear that the primitive churches made use of them. The apostle speaks of "the form of sound words," but it is not clear that he had reference to any known formulæ of doctrine. That which in the church is now known as the Apostles' Creed, though it may be a perfectly correct statement of apostolic doctrine, appears not to have been referred to during the first 3 centuries of the church, as possessed of apostolic authority. As Christianity began to spread, and churches were organized with a wide geographical separation from each other, the personal labors of the apostles being now concluded, and the circulation of the Scriptures limited, formulæ of faith became more or less necessary to keep up organization and intercourse. These were at first very brief, and far from being perfect digests of Christian doctrine. They gradually increased in definiteness, by collations and revisions. Thus the council of Nice (325) constructed a sort of eclectic creed from those which had already sprung up (as the Apostles', and that of Athanasius). So the councils of Constantinople (381) and Ephesus (431). The successive enlargement of creeds had been necessary to shut out heretics, who, on account of the advantages of church communion, would put their own construction on the laconic and unguarded forms in which the faith of the church had been at first expressed. When the reformation commenced (1517), the attempt was natural to express as pointedly as possible the fundamental differences between the reformers and the church; and when the church of England was organized, there was a new and more strenuous effort to express in concise, yet conciliatory language, the faith of a church which hoped to harmonize the opposing religious elements of the realm. The result was the 39 articles "for the avoyding of the diversities of opinion, and the stablishing of con-

sent touching true religion, put forth by the queen's authority" (1562). These articles were chiefly drawn up by Cranmer and Ridley. All candidates for ordination must subscribe these articles. The general doctrine of the English church concerning the sense in which she requires subscription, was declared in the reign of James I., viz.: that "they should be taken in the literal and grammatical sense." An attempt was made to change the articles (1643), and give them a more Calvinistic form, and so a more pointed condemnation of Antinomianism. The articles of the Methodist Episcopal church have been constructed on the basis of the 39 articles, as well as those of many other ecclesiastical organizations of modern date. The English church has from time to time discussed the question whether the 39 articles are Calvinistic or Arminian in their theology, as also whether they teach the doctrine of baptismal regeneration. Among other articles of faith, though not specially so designated, may be mentioned the Augsburg confession, the Helvetic confession, that of the church of the Netherlands, consisting of 37 articles, and afterward made the basis of the symbol agreed upon by the synod of Dort. Articles of faith are by all Christian churches required to be either directly revealed in the Scriptures or in the church, or logically deducible from such revelations, in order to be binding. Other tenets may be held by individuals, but are not the basis of church organization.

ARTICULATA, the third great division of the animal kingdom, in the classification of Cuvier, and by him subdivided into 4 classes. Other naturalists have subsequently added 4 more, making the following 8 classes, of which the first 4 are those of Cuvier:

1. Annelida, as leeches, earthworms, &c.
2. Crustacea, as crabs, lobsters, prawn, shrimps, &c.
3. Arachnida, as spiders, scorpions, mites, &c.
4. Insecta, as beetles, flies, butterflies, &c.
5. Myriopoda, as centipedes.
6. Cirrhopoda, as barnacles and sea-scissors.
7. Rotifera, wheel-shaped animalcules, aquatic.
8. Entozoa—lowest of the worms—parasites upon or within other animals.

Each of these classes will be found treated under its own name. The articulata may properly be ranked, upon the whole, as higher in the animal scale than the mollusca, although, as in this division, some species may be found less highly organized than are some of the radiata, the 4th division of the series. For the articulata possess a high development of the locomotive organs, in which the mollusca are particularly deficient. The nervous system, also, is so organized that it presents a sufficient characteristic for designating the group; and the name *homogangliata* has been proposed by Prof. Owen as a substitute for that of *articulata*, this having reference only to the external conformation of the body in transverse rings, which may be of the soft skin, or integument, or else serve, in the form of a hard shell, as an external skeleton, to which the muscles are attached. This arrangement of the nerves is a chain of knots,

or ganglia, symmetrically disposed upon a double cord, which passes through the ventral region of the body, and from each ganglion nervous filaments pass off to the different segments of the body. A nervous ring from the anterior pair of ganglia encircles the oesophagus. Filaments connect this with the organs of the senses, and the oesophageal ganglia have hence been regarded as analogous to the brain in the higher orders. They are more and more concentrated as the animal occupies a more elevated position in the division, the members of the body being at the same time brought into closer connection. The symmetrical arrangement of the nerves suggests that of the members also; and the limbs are found arranged in pairs, in the centipedes each pair proceeding from one of the articulations of the body. In the higher classes, as the crustacea, the same symmetry of pairs of limbs is perceived, and the connection of each pair with a segment of the body even when the thorax, or body, needing no flexibility for locomotive purposes, has its rings very obscurely defined. The lower groups contain the greater number of articulations, or rings, and these are usually soft, upon an elongated body, furnished, in most cases, with no true limbs. Progressive motion is obtained by the bending of the flexible body in one and another direction, the muscles which effect this occupying a large portion of the body which in other animals is usually devoted more to the organs of nutrition and digestion. These, in the articulata, are not so elaborate as in the mollusca. The organs for respiration are much more highly organized, particularly in the insecta. In the air-breathing species the blood is aerated by being exposed to the action of the air introduced within the body, the fluid being distributed in cavities, or tubes, permeable to the air; the former appear to be analogous to lungs. In the articulata is found the greatest diversity of forms and habits of life. The largest animals of the division are the lobsters and crabs of the crustacea; the rest are, for the most part, of small size, many of them so minute as to pass unnoticed in the watery elements in which they abound. In the few representations of the classes enumerated above are recognized animals which live in salt water and in fresh water, others that sport upon wings in the air above the surface of the earth; some that burrow beneath and avoid the light of day, and others whose haunts are within the bodies of other animals. Among so many varieties every mode of progression is met with, by swimming, crawling, skipping, flying, &c., each peculiarly adapted to the circumstances in which the animal is placed, and altogether presenting, as before remarked, a high development of the locomotive organs; and if any class, like the cirrhopoda, appear to be badly provided for in this respect, the deficiency is found to be wonderfully made up to them by the faculty they possess of attaching themselves to floating bodies, and thus becoming, though fixed to these, the greatest of

all travellers, being carried to all parts of the earth, and suffering no detriment though they pass from the warm waters of the tropical seas into the icy currents of the polar regions.

ARTICULATION, a term in anatomy, denoting the various modes of union between the bones of the skeleton. We may class articulations under 3 general heads, viz., movable joints, immovable joints, and joints of a mixed order, being somewhat movable, without much relative displacement of the contiguous surfaces. Movable joints are the most complex and various in structure; immovable, the most simple. Movable joints are common in the limbs, and the articulation of the lower jaw with the skull; immovable joints are common in the head and face and lower portion of the trunk; mixed forms of articulation are common in the spinal column and the upper portions of the trunk. The hinge-joints of the elbows and the knees, allowing free movements in one plane only, form one order of the movable class; the ball-and-socket joints of the hip and shoulder, allowing free movements in a circular direction, form a second order of the movable class; and different combinations of these 2 orders, as seen in the articulations of the lower jaw with the skull, of the hands and feet with the arms and legs at the wrists and the ankles, and also of the bones of the hands and fingers, feet and toes, form a third order of the movable class. The elbow-joint, in fact, is of a compound order, being of the hinge-joint form, with reference to the cubital movement of the forearm on the arm, and of the ball-and-socket form, with reference to the radial movement of the forearm on the arm, in what are termed the supination and pronation of the hand and arm. The class of immovable joints may also be subdivided into different orders and varieties. In the sacrum and the pelvis many bones which are distinct at first, literally grow together, in some subjects, so as to efface all trace of original separation, while in others traces remain visible of former separation and ulterior consolidation. In the cranium and the face there are numerous varieties of modes of junction between different bones connected by immovable articulation. The most prominent order of this class in the cranium is the serrated suture, the firmness of the union being increased by alternate notches, or indentations, and projections, like the teeth of a saw, formed on the edges of the bones, the teeth of the one being adapted to the indentations of the other. In this manner the bones of the skull unite at the top of the head and in the centre of the forehead. In other cases bevelled edges overlap each other, and in this manner the temporal bones are joined to the parietal bones of the skull. Another form of fixed articulation is the ridge-and-groove, a ridge being formed on the edge of one bone and a grooved fissure in another to receive it. By this means the bony part of the septum of the nose is inserted into the floor of the nasal cavity to divide the nostrils, and thus form a double cavity

by means of a partition wall.—The mixed class of articulations contains very many varieties of adaptation. The mode in which the ribs are attached to the spinal column behind, and to the sternum in front, forms one simple order of the mixed class; the mode in which the vertebrae are connected with each other in the spinal column, another, more complex; and the mode in which the slightly yielding portions of the pelvic articulations are connected, a third and simple order of this class.—The movable articulations being the most complex in form and structure, will give the best idea of the various elements of an articulation; and the ball-and-socket joint, being the most simple of this kind, will serve the purpose of a simple illustration. In the hip-joint we have a kind of ball, or rounded surface, at the head of the thigh bone, which hemispherical surface is capped with a thin layer of cartilage, somewhat elastic in structure, and exceedingly smooth on its external surface. In the bones of the pelvis a socket is formed, exactly shaped for the reception of this hemispherical head of the thigh bone, and this socket is lined with a thin layer of dense, elastic, and polished cartilage, so that in the joint 2 polished surfaces meet together and allow free movement, with the least possible amount of friction, but to lessen the effect of friction, and facilitate the movements of these surfaces one upon the other, a delicate membrane surrounds the external borders of the articular cartilages, and secretes a viscid fluid which lubricates the surfaces, preventing actual contact and destructive friction of the cartilaginous tissues. This lubricating fluid is technically called synovia, and the secreting membrane synovial sac, or synovial membrane. To prevent dislocation of the joint a strong rope of fibrous tissue, very similar in structure to that part of an oyster which cannot easily be removed from the shell, connects the top of the ball with the bottom of the socket, in a somewhat loose but very strongly attached manner. This is termed the round ligament. It is very short and very strong. The outer surfaces of the ball and socket (not in the socket, but outside) are connected by means of a strong ligamentous band of fibrous tissue, loosely connecting the head of the thigh bone with the pelvic bones, on the outer rim of the socket, but strongly attached to the bones themselves, which it binds together firmly, while permitting a considerable freedom of motion, or rotation, in the joint. In other joints of the movable class the outer ligaments are not always continuous and circular bands as in this case, but take the form of distinct fibrous ropes, strongly attached to the bones, and forming strong, flexible bands, as strips of leather nailed to the body and the lid of a box serve as ligaments where there are no hinges. Thin, dense, elastic layers of cartilage cap the articular edges and surfaces of bones in the great majority of joints; strong, fibrous, and flexible ligaments connect the bones externally; and, where the joints are very mov-

able, synovial membranes surround the articulating surfaces, and the synovia which they secrete lubricates the surfaces exposed to contact, friction, and mobility.

ARTIFICIAL HORIZON, a horizontal mirror, usually the surface of a basin of mercury. Half the angular distance between a star and its image, seen in the artificial horizon, is evidently equal to the altitude of the star above the real horizon.

ARTIGAS, José, a South American general, born at Montevideo, in Uruguay, in 1760, died in November, 1825. During the insurrection of the Spanish colonies of South America, he held in his hands for a long time the fate of the new republic of Buenos Ayres. He was at first a captain in the Spanish army, but on account of some difficulty with a superior officer, passed in 1811 into the service of the junta of Buenos Ayres, and was intrusted with the command of a force with which he defeated the royalist army near Las Piedras. At the head of the *guachos*, as are called the native cattle drivers along the banks of the La Plata, he defeated the enemy in several encounters, and supported so vigorously the republican army which was pressing the siege of Montevideo, that his efforts procured an accommodation between the cabinet of Rio Janeiro and the government of Buenos Ayres. He, however, excited the jealous suspicions of Poeypredon, director of the junta, by whom he was declared outlawed, and a price set upon his head. But the *guachos* flocked again to the standard of their hero and of the champion of republicanism, in opposition to the centralized and monarchical government which it was the aim of Poeypredon to establish; and Artigas having defeated 2 armies which had been sent against him, obliged his enemies to cede to him the whole of Uruguay. He next carried his arms against the Portuguese, who had availed themselves of these dissensions to get possession of Montevideo, and forced them to negotiate. After various vicissitudes of fortune, supported by the whole democratic party, he made a conquest of Buenos Ayres in 1820. He found it difficult to support himself amid men of determined hostility and dangerous cunning, and, weary of the turmoils in which his life had been passed, he sought and found an asylum in a Franciscan convent; first, however, having disarmed and sent back to their rural labors the wild hordes of whom his army had been composed. In this religious retreat he terminated his stormy career a few years later. As a general, he was distinguished for his bravery and great activity. He exercised absolute authority over the *guachos*, whose mode of life he had entirely adopted. From the time of his elevation to power, he despised all the enjoyments and conveniences of civilized life. In his rude spirit there was a wonderful power of will which acted almost irresistibly upon the masses of men about him. The motives of much of his political conduct are yet veiled in mystery, and must be learned by a

perusal of the contemporary documents. At present he is but the shadowy though prominent feature of an obscure history.

ARTILLERY. The invention of gunpowder, and its application to throwing heavy bodies in a given direction, are now pretty generally conceded to have been of eastern origin. In China and India, saltpetre is the spontaneous excrement of the soil, and, very naturally, the natives soon became acquainted with its properties. Fireworks made of mixtures of this salt with other combustible bodies were manufactured at a very early period in China, and used for purposes of war as well as for public festivities. We have no information at what time the peculiar composition of saltpetre, sulphur, and charcoal became known, the explosive quality of which has given it such an immense importance. According to some Chinese chronicles, mentioned by M. Paravey in a report made to the French academy in 1850, guns were known as early as 618 B. C.; in other ancient Chinese writings, fire-balls projected from bamboo tubes, and a sort of exploding shell, are described. At all events, the use of gunpowder and cannon for warlike purposes does not appear to have been properly developed in the earlier periods of Chinese history, as the first authenticated instance of their extensive application is of a date as late as 1282 of our era, when the Chinese, besieged by the Mongols in Kai-fang-fu, defended themselves with cannon throwing stone balls, and used explosive shells, petards, and other fireworks based upon gunpowder.—The Hindoos appear to have had some sort of warlike fireworks as early as the time of Alexander the Great, according to the evidence of the Greek writers *Ælian*, *Otesias*, *Philostratus*, and *Themistius*. This, however, certainly was not gunpowder, though saltpetre may have largely entered into its composition. In the Hindoo laws some sort of fire-arms appears to be alluded to; gunpowder is certainly mentioned in them, and, according to Prof. A. N. Wilson, its composition is described in old Hindoo medical works. The first mention of cannon, however, coincides pretty nearly with the oldest ascertained positive date of its occurrence in China. Chased's poems, about 1200, speak of fire-engines throwing balls, the whistling of which was heard at the distance of 10 ooss (1,500 yards). About 1258 we read of fireworks on carriages belonging to the king of Delhi. A hundred years later the use of artillery was general in India; and when the Portuguese arrived there, in 1498, they found the Indians as far advanced in the use of fire-arms as they themselves were.—From the Chinese and Hindoos the Arabs received saltpetre and fireworks. Two of the Arabic names for saltpetre signify *China salt*, and *China snow*. Chinese red and white fire is mentioned by their ancient authors. Incendiary fireworks are also of a date almost contemporaneous with the great Arabic invasion of Asia and Africa. Not to mention the

marjanite, a somewhat mythical fire-arm said to have been known and used by Mohammed, it is certain that the Byzantine Greeks received the first knowledge of fireworks (afterward developed in the Greek fire) from their Arab enemies. A writer of the 9th century, *Marous Gracchus*, gives a composition of 6 parts of saltpetre, 2 of sulphur, 1 of coal, which comes very near to the correct composition of gunpowder. The latter is stated with sufficient exactness, and first of all European writers, by Roger Bacon, about 1216, in his *Liber de Nullitate Magia*, but yet for fully a hundred years the western nations remained ignorant of its use. The Arabs, however, appear to have soon improved upon the knowledge they received from the Chinese. According to *Conde's history of the Moors in Spain*, guns were used, 1118, in the siege of Saragossa, and a culverin of 4 lb. calibre, among other guns, was cast in Spain in 1182. *Abdel-Mumen* is reported to have taken *Mohadia*, near Bona, in Algeria, with fire-arms, in 1156, and the following year *Niebla*, in Spain, was defended against the Castilians with fire-machines throwing bolts and stones. If the nature of the engines used by the Arabs in the 12th century remains still to be investigated, it is quite certain that in 1280 artillery was used against Cordova, and that by the beginning of the 14th century its knowledge had passed from the Arabs to the Spaniards. *Ferdinand IV.* took Gibraltar by cannon in 1308. *Baza* in 1312 and 1323, *Martos* in 1326, *Alicante* in 1381, were attacked with artillery, and carcasses were thrown by guns in some of these sieges. From the Spaniards the use of artillery passed to the remaining European nations. The French, in the siege of *Puy Guillaume* in 1333, had guns, and in the same year the German knights in Prussia used them. By 1350, fire-arms were common in all countries of western, southern, and central Europe. That artillery is of eastern origin, is also proved by the manufacture of the oldest European ordnance. The gun was made of bars of wrought iron welded longitudinally together, and strengthened by heavy iron rings forced over them. It was composed of several pieces, the movable breech being fixed to the flight after loading. The oldest Chinese and Indian guns are made exactly in the same way, and they are as old, or older, than the oldest European guns. Both European and Asiatic cannon, about the 14th century, were of very inferior construction, showing artillery to have still been in its infancy. Thus, if it remains uncertain when the composition of gunpowder and its application to fire-arms were invented, we can at least fix the period when it first became an important engine in warfare; the very clumsiness of the guns of the 14th century, wherever they occur, proves their novelty as regular war-machines. The European guns of the 14th century were very unwieldy affairs. The large-calibred ones could only be moved by being taken to pieces, each piece forming a wagon-load. Even the

small-calibred guns were exceedingly heavy, there being then no proper proportion established between the weight of the gun and that of the shot, nor between the shot and the charge. When they were brought into position, a sort of timber framework or scaffolding was erected for each gun to be fired from. The town of Ghent had a gun which, with the framework, measured 50 feet in length. Gun-carriages were still unknown. The cannons were mostly fired at very high elevations, like our mortars, and consequently had very little effect until shells were introduced. The projectiles were generally round shot of stone, for small calibres sometimes iron bolts. Yet, with all these drawbacks, cannon was not only used in sieges and the defence of towns, but in the field also, and on board ships of war. As early as 1386 the English took 2 French vessels armed with cannon. If the guns recovered from the *Mary Rose* (sunk 1545) may serve as a clue, those first ship guns were simply let into and secured in a log of wood hollowed out for the purpose, so as to be incapable of elevation.—In the course of the 15th century, considerable improvements were made, both in the construction and application of artillery. Cannon began to be cast of iron, copper, or brass. The movable breech was falling into disuse, the whole gun being cast of a piece. The best foundries were in France and Germany. In France, too, the first attempts were made to bring up and place guns under cover during a siege. About 1450 a sort of trench was introduced, and shortly after the first breaching batteries were constructed by the brothers Bureau, with the aid of which the king of France, Charles VII., retook in one year all the places the English had taken from him. The greatest improvements were, however, made by Charles VIII. of France. He finally did away with the movable breech, cast his guns of brass and in one piece, introduced trunnions, and gun-carriages on wheels, and had none but iron shot. He also simplified the calibres, and took the lighter regularly into the field. Of these, the double cannon was placed on a 4-wheeled carriage drawn by 35 horses; the remainder had 2-wheeled carriages, the trails dragging on the ground, and were drawn by from 24 down to 2 horses. A body of gunners was attached to each, and the service so organized as to constitute the first distinct corps of field artillery; the lighter calibres were movable enough to shift about with the other troops during action, and even to keep up with the cavalry. It was this new arm which procured to Charles VIII. his surprising successes in Italy. The Italian ordnance was still moved by bullocks; the guns were still composed of several pieces, and had to be placed on their frames when the position was reached; they fired stone shot, and were altogether so clumsy that the French fired a gun oftener in an hour than the Italians could do in a day. The battle of Fornovo (1495), gained

by the French field artillery, spread terror over Italy, and the new arm was considered irresistible. Machiavelli's *Arte della Guerra* was written expressly, in order to indicate means to counteract its effect by the skilful disposition of the infantry and cavalry. The successors of Charles VIII., Louis XII. and Francis I., continued to improve and lighten their field artillery. Francis organized the ordnance as a distinct department, under a grand-master of the ordnance. His field-guns broke the hitherto invincible masses of the Swiss pikemen at Marignano, 1515, by rapidly moving from one flanking position to another, and thus they decided the battle. The Chinese and Arabs knew the use and manufacture of shells, and it is probable that from the latter this knowledge passed to the European nations. Still, the adoption of this projectile, and of the mortar from which it is now fired, did not take place in Europe before the second half of the 15th century, and is commonly ascribed to Pandolfo Malatesta, prince of Rimini. The first shells consisted of 2 hollow metal hemispheres screwed together, the art of casting them hollow was of later invention.—The emperor Charles V., was not behind his French rivals in the improvement of field-guns. He introduced limbers, thus turning the two-wheeled gun, when it had to be moved, into a 4-wheeled vehicle capable of going at a faster pace and of surmounting obstacles of ground. Thus his light guns, at the battle of Rémi in 1554, could advance at a gallop.—The first theoretical researches, respecting gunnery and the flight of projectiles, also fall in this period. Tartaglia, an Italian, is said to be the discoverer of the fact that the angle of elevation of 45° gives, *in vacuo*, the greatest range. The Spaniards Collado and Ufano also occupied themselves with similar inquiries. Thus the theoretical foundations for scientific gunnery were laid. About the same time Vannoccio Biringuccio's inquiries into the art of casting (1540) produced considerable progress in the manufacture of cannon, while the invention of the calibre scale by Hartmann, by which every part of a gun was measured by its proportion to the diameter of bore, gave a certain standard for the construction of ordnance, and paved the way for the introduction of fixed theoretical principles, and of general experimental rules.—One of the first effects of the improved artillery was a total change in the art of fortification. Since the time of the Assyrian and Babylonian monarchies, that art had made but little progress. But now the new fire-arm everywhere made a breach on the masonry walls of the old system, and a new plan had to be invented. The defences had to be constructed so as to expose as little masonry as possible to the direct fire of the besieger, and to admit of a strong artillery being placed on the ramparts. The old masonry wall was replaced by an earthwork rampart, only faced with masonry, and the small flanking town was turned into a large pentagonal bastion. Gradually the whole of the masonry

used in fortification was covered against direct fire by outlying earthworks, and by the middle of the 17th century the defence of a fortified place became once more relatively stronger than the attack, until Vauban again gave the ascendant to the latter. Hitherto the operation of loading had been carried on with loose powder shovelled into the gun. About 1600 the introduction of cartridges, cloth bags containing the prescribed quantity of powder, much abridged the time necessary for loading, and insured greater precision of fire by greater equality of charge. Another important invention was made about the same time, that of grape-shot and case-shot. The construction of field-guns, adapted for throwing hollow shot, also belongs to this period. The numerous sieges occurring during the war of Spain against the Netherlands contributed very much to the improvement of the artillery used in the defence and attack of places, especially as regards the use of mortars and howitzers, of shells, carcasses, and red-hot shot, and the composition of fuzes and other military fireworks. The calibres in use in the beginning of the 17th century were still of all sizes, from the 48-pounder to the smallest falconets bored for balls of $\frac{1}{4}$ lb. weight. In spite of all improvements, field artillery was still so imperfect that all this variety of calibre was required to obtain something like the effect we now realize with a few middle-sized guns between the 6-pounder and the 12-pounder. The light calibres, at that time, had mobility, but no effect; the large calibres had effect, but no mobility; the intermediate ones had neither the one nor the other in a degree sufficient for all purposes. Consequently, all calibres were maintained, and jumbled together in one mass, each battery consisting generally of a regular assortment of cannon. The elevation was given to the piece by a quoin. The carriages were still clumsy, and a separate model was of course required for each calibre, so that it was next to impossible to take spare wheels and carriages into the field. The axletrees were of wood, and of a different size for each calibre. In addition to this, the dimensions of the cannon and carriages were not even the same for one single calibre, there being everywhere a great many pieces of old construction, and many differences of construction, in the several workshops of a country. Cartridges were still confined to guns in fortresses; in the field the cannon was loaded with loose powder, introduced on a shovel, upon which a wad and the shot were rammed down. Loose powder was equally worked down the touchhole, and the whole process was extremely slow. The gunners were not considered regular soldiers, but formed a guild of their own, recruiting themselves by apprentices, and sworn not to divulge the secrets and mysteries of their handiwork. When a war broke out, the belligerents took as many of them into their service as they could get, over and above their peace establishment. Each of these gunners or bombardiers received the com-

mand of a gun, had a saddle-horse, and apprentice, and as many professional assistants as he required, beside the requisite number of men for shifting heavy pieces. Their pay was fourfold that of a soldier. The horses of the artillery were contracted for when a war broke out; the contractor also found harness and drivers. In battle the guns were placed in a row in front of the line, and unlimbered; the horses were taken out of the shafts. When an advance was ordered, the limbers were horsed, and the guns limbered up; sometimes the lighter calibres were moved, for short distances, by men. The powder and shot were carried in separate carts; the limbers had not yet any boxes for ammunition. Manœuvring, loading, priming, pointing, and firing, were all operations of great slowness, according to our present notions, and the number of hits, with such imperfect machinery, and the almost total want of science in gunnery, must have been small indeed. The appearance of Gustavus Adolphus in Germany, during the 30 years' war, marks an immense progress in artillery. This great warrior did away with the extremely small calibres, which he replaced, first, by his so-called leather guns, light wrought-iron tubes covered with ropes and leather. These were intended to fire grape-shot only, which thus was first introduced into field warfare. Hitherto its use had been confined to the defence of the ditch in fortresses. Along with grape and case shot, he also introduced cartridges in his field artillery. The leather guns not proving very durable, were replaced by light cast-iron 4-pounders, 16 calibres long, weighing 6 cwt. with the carriage, and drawn by two horses. Two of these pieces were attached to each regiment of infantry. Thus the regimental artillery which was preserved in many armies up to the beginning of this century, arose by superseding the old small calibred, but comparatively clumsy guns, and was originally intended for case shot only, though very soon it was also made to fire round shot. The heavy guns were kept distinct, and formed into powerful batteries occupying favorable positions on the wings or in front of the centre of the army. Thus by the separation of the light from the heavy artillery, and by the formation of batteries, the tactics of field artillery were founded. It was General Torshenson, the inspector-general of the Swedish artillery, who mainly contributed to these results by which field artillery now first became an independent arm, subject to distinct rules of its own for its use in battle. Two further important inventions were made about this time: about 1650, that of the horizontal elevating screw, as it was used until Gribeauval's times, and about 1697, that of tubes filled with powder for priming, instead of working powder into the touchhole. Both pointing and loading became much facilitated thereby. Another great improvement was the invention of the prolonge, for manœuvring at short distances. The number of guns carried into the field during the 17th century,

was very large. At Greifenhagen, Gustavus Adolphus had 80 pieces with 20,000 men, and at Frankfort-on-the-Oder, 200 pieces with 18,000 men. Artillery trains of 100 to 200 guns were of very common occurrence during the wars of Louis XIV. At Malplaquet, nearly 300 pieces of cannon were employed on both sides; this was the largest mass of artillery hitherto brought together on a single field of battle. Mortars were very generally taken into the field about this time. The French still maintained their superiority in artillery. They were the first to do away with the old guild system and enrol the gunners as regular soldiers, forming, in 1671, a regiment of artillery, and regulating the various duties and ranks of the officers. Thus this branch of service was recognized as an independent arm, and the education of the officers and men was taken in hand by the state. An artillery school, for at least 50 years the only one in existence, was founded in France in 1690. A hand-book of artilleristic science, very good for the time, was published in 1697 by Saint Rémy. Still the secrecy surrounding the "mystery" of gunnery was so great that many improvements adopted in other countries were as yet unknown in France, and the construction and composition of every European artillery differed widely from any other. Thus the French had not yet adopted the howitzer, which had been invented in Holland and adopted in most armies before 1700. Limber boxes for ammunition, first introduced by Maurice of Nassau, were unknown in France, and indeed but little adopted. The gun, carriage, and limber were too heavy to admit of their being encumbered with the extra weight of ammunition. The very small calibres, up to 8 lbs. inclusive, had indeed been done away with, but the light regimental artillery was unknown in France. The charges used in the artillery of the times hitherto considered were, for guns, generally very heavy; originally equal in weight to the ball. Although the powder was of inferior quality, these charges were still far stronger in effect than those now in use, thus they were one of the chief causes of the tremendous weight of the cannon. To resist such charges the weight of a brass cannon was often from 250 to 400 times the weight of the shot. Gradually, however, the necessity of lightening the guns compelled a reduction of the charge, and about the beginning of the 18th century, the charge was generally only one-half the weight of the shot. For mortars and howitzers the charge was regulated by the distance, and generally very small. The end of the 17th and beginning of the 18th century was the period in which the artillery was in most countries finally incorporated in the army, deprived of its mediæval character of a guild, recognized as an arm, and thus enabled to take a more regular and rapid development. The consequence was an almost immediate and very marked progress. The irregularity and variety of calibres and models, the uncertainty of all

existing empirical rules, the total want of well-established principle, now became evident and unbearable. Accordingly, experiments were everywhere made on a large scale to ascertain the effects of calibres, the relations of the calibre to the charge and to the weight and length of the gun, the distribution of metal in the cannon, the ranges, the effects of recoil on the carriages, &c. Between 1730 and 1740, Bédior directed such experiments at La Fère in France, Robius in England, and Papacino d'Antoni at Turin. The result was a great simplification of the calibres, a better distribution of the metal of the gun, and a very general reduction of the charges, which were now between $\frac{1}{2}$ and $\frac{3}{4}$ the weight of the shot. The progress of scientific gunnery went side by side with these improvements. Galileo had originated the parabolic theory, Torricelli his pupil, Anderson, Newton, Blondel, Bernoulli, Wolff, and Euler, occupied themselves with further determining the flight of projectiles, the resistance of the air, and the causes of their deviations. The above-named experimental artillerists also contributed materially to the advancement of the mathematical portion of gunnery. Under Frederic the Great the Prussian field artillery was again considerably lightened. The short, light, regimental guns, not more than 14, 16, or 18 calibres long, and weighing from 80 to 150 times the weight of the shot, were found to have a sufficient range for the battles of those days, decided principally by infantry fire. Accordingly, the king had all his 12-pounders cast the same proportional length and weight. The Austrians, in 1758, followed this example, as well as most other states; but Frederic himself, in the latter part of his reign, again provided his reserve artillery with long powerful guns, his experience at Leuthen having convinced him of their superior effects. Frederic the Great introduced a new arm by mounting the gunners of some of his batteries, and thus creating horse artillery, destined to give the same support to cavalry as foot-artillery did to infantry. The new arm proved extremely effective, and was very soon adopted by most armies; some, as the Austrians, mounting the gunners in separate wagons as a substitute. The proportion of guns with the armies of the 18th century was still very large. Frederic the Great had, in 1756, with 70,000 men 206 guns, 1763 with 67,000 men 275 guns, 1778 with 180,000 men 811 guns. These guns, with the exception of the regimental ones which followed their battalions, were organized in batteries of various sizes from 6 to 20 guns each. The regimental guns advanced with the infantry, while the batteries were firing from chosen positions, and sometimes advanced to a second position, but here they generally awaited the issue of the battle; they left, as regards mobility, still very much to be desired, and at Kunersdorf, the loss of the battle was due to the impossibility of bringing up the artillery in the decisive moment. The Prussian general, Tempelhof, also intro-

duced field-mortar batteries, the light mortars being carried on the backs of mules; but they were soon again abolished after their uselessness had been proved in the war of 1792 and '93. The scientific branch of artillery was, during this period, cultivated especially in Germany. Struensee and Tempelhof wrote useful works on the subject, but Scharnhorst was the leading artilleryman of his day. His hand-book of artillery is the first comprehensive really scientific treatise on the subject, while his hand-book for officers, published as early as 1787, contains the first scientific development of the tactics of field artillery. His works, though antiquated in many respects, are still classical. In the Austrian service, Gen. Vega, in the Spanish, Gen. Morla, in the Prussian, Hoyer and Rouvroy, made valuable contributions to artilleristic literature. The French had reorganized their artillery according to the system of Valière in 1782; they retained 24, 16, 12, 8, and 4-pounders, and adopted the 8-inch howitzer. Still there was a great variety of models of construction; the guns were from 22 to 26 calibres long, and weighed about 250 times as much as the corresponding shot. At length, in 1774, General Gribeauval, who had served with the Austrians in the 7 years' war, and who knew the superiority of the new Prussian and Austrian artilleries, carried the introduction of his new system. The siege artillery was definitively separated from the field artillery. It was formed of all guns heavier than 12-pounders, and of all the old heavy 12-pounder guns. The field artillery was composed of 12-pounder, 8-pounder, and 4-pounder guns, all 18 calibres long, weighing 150 times the weight of the shot, and of a 6-inch howitzer. The charge for the guns was definitely fixed at one-third the weight of the shot, the perpendicular elevating screw was introduced, and every part of a gun or carriage was made according to a fixed model, so as to be easily replaced from the stores. Seven models of wheels, and 8 models of axletrees, were sufficient for all the various vehicles used in the French artillery. Although the use of limber-boxes to carry a supply of ammunition was known to most artillerists, Gribeauval did not introduce them in France. The 4-pounders were distributed with the infantry, every battalion receiving 2 of them; the 8 and 12-pounders were distributed in separate batteries as reserve artillery, with a field-forge to every battery. Train and artisan companies were organized, and altogether this artillery of Gribeauval was the first corps of its kind established on a modern footing. It has proved superior to any of its day, in the proportions by which its constructions were regulated, in its material, and in its organization, and for many years it has served as a model. Thanks to Gribeauval's improvements, the French artillery, during the wars of the revolution, was superior to any other, and soon became, in the hands of Napoleon, an arm of hitherto unknown

power. There was no alteration made, except that the system of regimental guns was definitively done away with in 1799, and that with the immense number of 6-pounder and 8-pounder guns conquered in all parts of Europe, these calibres were also introduced in the service. The whole of the field artillery was organized into batteries of 6 pieces, among which one was generally a howitzer, and the remainder guns. But if there was little or no change in the material, there was an immense one in the tactics of artillery. Although the number of guns was somewhat diminished in consequence of the abolition of regimental pieces, the effect of artillery in a battle was heightened by its skilful use. Napoleon used a number of light guns, attached to the divisions of infantry, to engage battle, to make the enemy show his strength, &c., while the mass of the artillery was held in reserve, until the decisive point of attack was determined on; then enormous batteries were suddenly formed, all acting upon that point, and thus preparing by a tremendous cannonade the final attack of the infantry reserves. At Friedland 70 guns, at Wagram 100 guns, were thus formed in line; at Borodino, a battery of 80 guns prepared Ney's attack on Semenovka. On the other hand, the large masses of reserve cavalry formed by Napoleon, required for their support a corresponding force of horse artillery, which arm again received the fullest attention, and was very numerous represented in the French armies, where its proper tactical use was first practically established. Without Gribeauval's improvements, this new use of artillery would have been impossible, and with the necessity for the altered tactics, these improvements gradually, and with slight alterations, found their way into all continental armies.—The British artillery, about the beginning of the French revolutionary war, was exceedingly neglected, and much behind that of other nations. They had two regimental guns to each battalion, but no reserve artillery. The guns were horsed in single team, the drivers walking alongside with long whips. Horses and drivers were hired. The *matériel* was of very old-fashioned construction, and except for very short distances, the pieces could move at a walk only. Horse artillery was unknown. After 1800, however, when experience had shown the inadequacy of this system, the artillery was thoroughly reorganized by Major Spearman. The limbers were adapted for double team, the guns brigaded in batteries of 6 pieces, and in general those improvements were introduced which had been in use for some time already on the continent. No expense being spared, the British artillery soon was the neatest, most solidly, and most luxuriously equipped of its kind; great attention was paid to the newly erected corps of horse artillery, which soon distinguished itself by the boldness, rapidity, and precision of its manœuvres. As to fresh improvements in the *matériel*, they were confined to the construction of

the vehicles; the block-tail gun-carriage, and the ammunition wagon with a limber to it have since been adopted in most countries of the continent.—The proportion of artillery to the other components of an army became a little more fixed during this period. The strongest proportion of artillery now present with an army was that of the Prussians at Pirmasens—7 guns for every 1,000 men. Napoleon considered 8 guns per 1,000 men quite sufficient, and this proportion has become a general rule. The number of rounds to accompany a gun was also fixed; at least 200 rounds per gun, of which $\frac{1}{3}$ or $\frac{1}{4}$ were case shot. During the peace following the downfall of Napoleon, the artilleries of all European powers underwent gradual improvements. The light calibres of 8 and 4 lbs. were everywhere abolished, the improved carriages and wagons of the English artillery were adopted in most countries. The charge was fixed almost everywhere at $\frac{1}{3}$ the metal of the gun at, or near, 150 times the weight of the shot, and the length of the piece at from 16 to 18 calibres. The French reorganized their artillery in 1827. The field-guns were fixed at 8 and 12 lb. calibre, 18 calibres long, charge $\frac{1}{3}$ weight of metal in gun 150 times that of the shot. The English carriages and wagons were adopted, and limber-boxes for the first time introduced into the French service. Two kinds of howitzers, of 15 and 16 centimetres of bore, were attached to the 8 and 12-pounder batteries, respectively. A great simplicity distinguishes this new system of field artillery. There are but 2 sizes of gun-carriages, 1 size of limber, 1 size of wheel, and 2 sizes of axletrees to all the vehicles used in the French field batteries. Beside this, a separate mountain artillery was introduced, carrying howitzers of 12 centimetres bore.—The English field artillery now has for its almost exclusive calibre the 9-pounders of 17 calibres long, weight $1\frac{1}{4}$ cwt. to 1 pound weight of shot, charge $\frac{1}{3}$ the weight of shot. In every battery there are 2 24-pounder 5 $\frac{1}{2}$ -inch howitzers. Six-pounder and 12-pounder guns were not sent out at all in the late Russian war. There are 2 sizes of wheels in use. In both the English and French foot artillery the gunners are mounted during manœuvres on the limber and ammunition wagons.—The Prussian army carries 6 and 12-pounder guns, 18 calibres long, weighing 145 times, and charged with $\frac{1}{3}$ the weight of the shot. The howitzers are 5 $\frac{1}{2}$ and 6 $\frac{1}{2}$ -inch bore. There are 6 guns and 2 howitzers to a battery. There are 2 wheels and 2 axletrees, and 1 limber. The gun-carriages are of Gribeauval construction. In the foot artillery, for quick manœuvres, 5 gunners, sufficient to serve the gun, mount the limber-box and the off-horses; the remaining 3 follow as best they can. The ammunition wagons are not, therefore, attached to the guns, as in the French and British service, but form a column apart, and are kept out of range during action. The improved English ammunition wagon was adopted in 1842.

—The Austrian artillery has 6 and 12-pounder guns, 16 calibres long, weighing 135 times, charged with $\frac{1}{3}$ the weight of the shot. The howitzers are similar to those of the Prussian service. Six guns and 2 howitzers compose a battery.—The Russian artillery has 6 and 12-pounder guns, 18 calibres long, 150 times the weight of the shot, with a charge of $\frac{1}{3}$ its weight. The howitzers are 5 and 6-inch bore. According to the calibre and destination, either 8 or 12 pieces form a battery, one-half of which are guns, and the other half howitzers.—The Sardinian army has 8-pounder and 16-pounder guns, with a corresponding size of howitzer. The smaller German armies all have 6 and 12-pounders, the Spaniards 8 and 12-pounders, the Portuguese, Swedes, Danes, Belgians, Dutch, and Neapolitans 6 and 12-pounders.—The start given to the British artillery by Major Spearman's reorganization, along with the interest for further improvement thereby awakened in that service, and the wide range offered to artilleristic progress by the immense naval artillery of Great Britain, have contributed to many important inventions. The British compositions for fireworks, as well as their gunpowder, are superior to any other, and the precision of their time fuzes is unequalled. The principal invention latterly made in the British artillery are the shrapnel shells (hollow shot, filled with musket balls, and exploding during the flight), by which the effective range of grape has been rendered equal to that of round shot. The French, skilful as they are as constructors and organizers, are nearly the only army which has not yet adopted this new and terrible projectile; they have not been able to make out the fuze composition, upon which every thing depends.—A new system of field artillery has been proposed by Louis Napoleon, and appears to be in course of adoption in France. The whole of the 4 calibres of guns and howitzers now in use, to be superseded by a light 12-pounder gun, 15 $\frac{1}{2}$ calibres long, weighing 110 times, and charged with $\frac{1}{3}$ the weight of the solid shot. A shell of 12 centim. (the same now used in the mountain artillery), to be fired out of the same gun with a reduced charge, thus superseding howitzers for the special use of hollow shot. The experiments made in 4 artillery schools of France have been very successful, and it is said that these guns showed a marked superiority, in the Crimea, over the Russian guns, mostly 6-pounders. The English, however, maintain that their long 9-pounder is superior in range and precision to this new gun, and it is to be observed that they were the first to introduce, but very soon again to abandon, a light 12-pounder for a charge of $\frac{1}{3}$ the shot's weight, and which has evidently served Louis Napoleon as a model. The firing of shells from common guns is taken from the Prussian service, where, in sieges, the 24-pounders are made to fire shells for certain purposes. Nevertheless, the capabilities of Louis Napoleon's gun have still to be determined by experience,

and as nothing special has been published on its effects in the late war, we cannot here be expected finally to judge on its merits.—The laws and experimental maxims for propelling solid, hollow, or other projectiles, from cannon, the ascertained proportions of range, elevation, charge, the effects of windage and other causes of deviation, the probabilities of hitting the mark, and the various circumstances that may occur in warfare, constitute the science of gunnery. Though the fact, that a heavy body projected *in vacuo*, in a direction different from the vertical, will describe a parabola in its flight, forms the fundamental principle of this science, yet the resistance of the air, increasing as it does with the velocity of the moving body, alters very materially the application of the parabolic theory in gunnery practice. Thus for guns propelling their shot at an initial velocity of 1,400 to 1,700 feet in a second, the line of flight varies considerably from the theoretic parabola, so much so that with them, the greatest range is obtained at an elevation of only about 20 degrees, while according to the parabolic theory it should be at 45 degrees. Practical experiments have determined, with some degree of precision, these deviations, and thus fixed the proper elevations for each class of guns, for a given charge and range. But there are other circumstances affecting the flight of the shot. There is, first of all, the windage, or the difference by which the diameter of the shot must be less than that of the bore, to facilitate loading. It causes first an escape of the expanding gas during the explosion of the charge, in other words, a reduction of the force, and secondly an irregularity in the direction of the shot, causing deflections in a vertical, or horizontal sense. Then there is the unavoidable inequality in the weight of the charge, or in its condition at the moment it is used, the eccentricity of the shot, the centre of gravity not coinciding with the centre of the sphere, which causes deflections varying according to the relative position of the centres at the moment of firing, and many other causes producing irregularity of results under seemingly the same conditions of flight. For field-guns, we have seen that the charge of $\frac{1}{4}$ of the shot's weight, and a length of 16–18 calibres are almost universally adopted. With such charges, the point-blank range (the gun being laid horizontal), the shot will touch the ground at about 800 yards distance, and by elevating the gun, this range may be increased up to 3,000 or 4,000 yards. Such a range, however, leaves all probability of hitting the mark out of the question, and for actual and effective practice, the range of field-guns does not exceed 1,400 or 1,500 yards, at which distance scarcely 1 shot out of 6 or 8 might be expected to hit the mark. The decisive ranges, in which alone cannon can contribute to the issue of a battle, are, for round shot and shell, between 600 and 1,100 yards, and at these ranges the probability of striking the object is in-

deed far greater. Thus it is reckoned that at 700 yards about 50 per cent., at 900 yards about 35 per cent., at 1,100 yards 25 per cent. out of the shots fired from a 6-pounder, will hit a target representing the front of a battalion in column of attack (84 yards long by 3 yards high). The 9 and 12-pounder will give somewhat better results. In some experiments made in France in 1850, the 8-pounders and 12-pounders then in use gave the following results, against a target 80 metres by 8 metres (representing a troop of cavalry) at:—

12-p'ders, hits,	500 met.	600 met.	700 met.	800 met.	900 met.
8-p'ders, " "	64 p.ct.	54 p.ct.	43 p.ct.	37 p.ct.	33 p.ct.
	67 "	44 "	40 "	28 "	25 "

Though the target was higher by one-half, the practice here remained below the average stated above. With field-howitzers the charge is considerably less in proportion to the weight of the projectile than with guns. The short length of the piece (7 to 10 calibres) and the necessity of firing it at great elevations, are the causes of this. The recoil from a howitzer fired under high elevation, acting downward as well as backward, would, if a heavy charge was used, strain the carriage so as to disable it after a few rounds. This is the reason why in most continental artilleries several charges are in use in the same field-howitzer, thus making the gunner to produce a given range by different combination of charge and elevation. Where this is not the case, as in the British artillery, the elevation taken is necessarily very low, and scarcely exceeding that of guns; the range-tables for the British 24-pounder howitzer, 2½-pound charge, do not extend beyond 1,050 yards, with 4° elevation; the same elevation, for the 9-pounder gun, giving a range of 1,400 yards. There is a peculiar short kind of howitzer in use in most German armies, which is capable of an elevation of from 16 to 20 degrees, thus acting somewhat like a mortar; its charge is, necessarily, but small; it has this advantage over the common, long howitzer, that its shells can be made to drop into covered positions, behind undulations of ground, &c. This advantage is, however, of a doubtful nature against movable objects like troops, though of great importance where the object covered from direct fire is immovable; and as to direct fire, these howitzers, from their shortness (16 to 7 calibres) and small charge, are all but useless. The charge, to obtain various ranges at an elevation fixed by the purpose intended (direct firing or shelling), necessarily varies very much; in the Prussian field artillery, where these howitzers are still used, not less than twelve different charges occur. Withal, the howitzer is but a very imperfect piece of cannon, and the sooner it is superseded by an effective field shell-gun, the better.—The heavy cannon used in fortresses, sieges, and naval armaments, are of various description. Up to the late Russian war, it was not customary to use in siege-warfare heavier guns than 24-pounders, or, at the very outside, a few 32-pounders. Since the siege of

Sebastopol, however, siege-guns and ship-guns are the same, or, rather, the effect of the heavy ship-guns in trenches and land-defences has proved so unexpectedly superior to that of the customary light siege-guns, that the war of sieges will henceforth have to be decided, in a great measure, by such heavy naval cannon. In both siege and naval artillery, there are generally found various models of guns for the same calibre. There are light and short guns, and there are long and heavy ones. Mobility being a minor consideration, guns for particular purposes are often made 22 to 25 calibres long, and some of these are, in consequence of this greater length, as precise as rifles in their practice. One of the best of this class of guns, is the Prussian brass 24-pounder of 10 feet 4 inches, or 22 calibres long, weighing 60 cwt.; for dismounting practice in a siege, there is no gun like it. For most purposes, however, a length of 16 to 20 calibres is found quite sufficient, and as, upon an average, size of calibre will be preferable to extreme precision, a mass of 60 cwt. of iron or gun-metal will be more usefully employed, as a rule, in a heavy 32-pounder of 16-17 calibres long. The new long iron 32-pounder, one of the finest guns in the British navy, 9 feet long, 50 cwt., measures but 16½ calibres. The long 68-pounder, 112 cwt., pivot-gun of all the large screw 181 gun-ships, measures 10 feet 10 inches, or a trifle more than 16 calibres; another kind of pivot-gun, the long 56-pounder of 98 cwt., measures 11 feet, or 17½ calibres. Still a great number of less effective guns enter into naval armaments even now, bored-up guns of merely 11 or 12 calibres, and carronades of 7-8 calibres long. There is, however, another kind of naval gun that was introduced about 35 years ago by General Paixhans, and has since received an immense importance, the shell-gun. This kind of ordnance has undergone considerable improvement, and the French shell-gun still comes nearest to that constructed by the inventor; it has retained the cylindrical chamber for the charge. In the English service the chamber is either a short frustum of a cone, reducing only very slightly the diameter of the bore, or there is no chamber at all; it measures in length from 10 to 18 calibres, and is intended for hollow shot exclusively; but the long 68-pdrs. and 56-pdrs. mentioned above throw solid shot and shell indiscriminately. In the U. S. navy Capt. Dahlgren has proposed a new system of shell-guns, consisting of short guns of very large calibre (11 and 9 inches bore), which has been partly adopted in the armament of several new frigates. The value of this system has still to be fixed by actual experience, which must determine whether the tremendous effect of such enormous shells can be obtained without the sacrifice of precision, which cannot but suffer from the great elevation required at long ranges. In sieges and naval gunnery, the charges are as variable as the constructions of the guns themselves, and the ends to be attained. In laying

a breach in masonry, the heaviest charges are used, and these amount, with some very heavy and solid guns, to one-half the weight of the shot. On the whole, however, one-fourth may be considered a full average charge for siege purposes, increased sometimes to one-third, diminished at others to one-sixth. On board ship, there are generally 8 classes of charges to each gun; the high charge, for distant practice, chasing, &c., the medium charge, for the average effective distances of naval engagements; the reduced, for close quarters and double shooting. For the long 32-pdrs. they are equal to $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ of the shot's weight. For short light guns and shell-guns, these proportions are of course still more reduced; but with the latter, too, the hollow shot does not reach the weight of the solid one. Beside guns and shell-guns, heavy howitzers and mortars enter into the composition of siege and naval artillery. Howitzers are short pieces intended to throw shell at an elevation up to 12 or 30 degrees, and to be fixed on carriages; mortars are still shorter pieces, fixed to blocks, intended to throw shell at an elevation generally exceeding 20 degrees, and increasing even to 60 degrees. Both are chambered ordnance; i. e. the chamber or part of the bore intended to receive the charge, is less in diameter than the flight or general bore. Howitzers are seldom of a calibre exceeding 8 inches, but mortars are bored up to 18, 15, and more inches. The flight of a shell from a mortar, from the smallness of the charge (1-20th to 1-40th of the weight of the shell), and from its considerable elevation, is less interfered with by the resistance of the air, and here the parabolic theory may be used in gunnery calculations without material deviation from practical results. Shells from mortars are intended to act either by bursting, and, as carcasses, setting fire to combustible objects by the jet of flame from the fuzes, or by their weight as well, in breaking through vaulted and otherwise secured roofs; in the latter case the higher elevation is preferred, giving the highest flight and greatest momentum of fall. Shells from howitzers are intended to act, first by impact, and afterward by bursting. From their great elevation, and the small initial velocity imparted to the shell, and consequent little resistance offered to it by the air, a mortar throws its projectile further than any other kind of ordnance, the object fired at being generally a whole town, there is little precision required; and thus it happens that the effective range of heavy mortars extends to 4,000 yards and upward, from which distance Sveaborg was bombarded by the Anglo-French mortar-boats.—The application of these different kinds of cannon, projectiles, and charges, during a siege, will be treated of under that head; the use of naval artillery constitutes nearly the whole fighting part of naval elementary tactics, and does therefore not belong to this subject; it thus only remains for us to make a few observations on the use and tactics of field artillery.—Artil-

lery has no arms for hand-to-hand fight; all its forces are concentrated in the distant effect of its fire. It is, moreover, in fighting condition as long only as it is in position; as soon as it limbers up, or attaches the prolonge for a movement, it is temporarily disabled. From both causes, it is the most defensive of all the 8 arms; its powers of attack are very limited indeed, for attack is onward movement, and its culminating point is the clash of steel against steel. The critical moment for artillery is therefore the advance, taking position, and getting ready for action under the enemy's fire. Its deployments into line, its preliminary movements, will have to be masked either by obstacles of ground or by lines of troops. It will thus gain a position parallel to the line it has to occupy, and then advance into position straight against the enemy, so as not to expose itself to a flanking fire. The choice of a position is a thing of the highest importance, both as regards the effect of the fire of a battery, and that of the enemy's fire upon it. To place his guns so that their effect on the enemy is as telling as possible, is the first important point; security from the enemy's fire the second. A good position must afford firm and level standing ground for the wheels and trails of the guns; if the wheels do not stand level, no good practice is possible; and if the trail digs into the ground, the carriage will soon be broken by the power of recoil. It must, beside, afford a free view of the ground held by the enemy, and admit of as much liberty of movement as possible. Finally, the ground in front, between the battery and the enemy, must be favorable to the effect of our arms, and unfavorable, if possible, to that of theirs. The most favorable ground is a firm and level one, affording the advantage of ricochet practice, and making the shot that go short strike the enemy after the first graze. It is wonderful what difference the nature of the ground will make in artillery practice. On soft ground the shot, on grazing, will deflect or make irregular rebounds, if they do not stick fast in it at once. The way the furrows run in ploughed land, makes a great difference, especially with canister and shrapnell firing; if they run crossways, most of the shot will bury themselves in them. If the ground be soft, undulating, or broken immediately in front of us, but level and hard further on toward the enemy, it will favor our practice, and protect us from his. Firing down or up inclinations of more than 5 degrees, or firing from the top of one hill to that of another, is very unfavorable. As to our safety from the enemy's fire, very small objects will increase that. A thin fence, scarcely hiding our position, a group of shrubs, or high corn, will prevent his taking correct aim. A small abrupt bank on which our guns are placed will catch the most dangerous of his projectiles. A dyke makes a capital parapet, but the best protection is the crest of a slight undulation of ground, behind which we draw our guns so far back that the enemy sees nothing

but the muzzles; in this position every shot striking the ground in front, will bound high over our heads. Still better is it, if we can cut out a stand for our guns into the crest, about 2 feet deep, flattening out to the rear with the slope, so as to command the whole of the external slope of the hill. The French under Napoleon were extremely skilful in placing their guns, and from them all other nations have learnt this art. Regarding the enemy, the position should be chosen so as to be free from flank or enfilading fire; regarding our own troops, it should not hamper their movements. The usual distance from gun to gun in line is 20 yards, but there is no necessity to adhere strictly to any of these rules of the parade-ground. Once in position, the limbers remain close behind their guns, while the wagons, in some services, remain under cover. Where the wagons are used for mounting the men, they too must run the chance of going into effective range. The battery directs its fire upon that portion of the enemy's forces which at the time most menaces our position; if our infantry is to attack, it fires upon either the opposing artillery, if that is yet to be silenced, or upon the masses of infantry if they expose themselves; but if a portion of the enemy advance to actual attack, that is the point to aim at, not minding the hostile artillery which fires on us. Our fire against artillery will be most effective when that artillery cannot reply, *i. e.* when it is limbering up, moving, or unlimbering. A few good shots cause great confusion in such moments. The old rule that artillery, excepting in pressing moments of importance, should not approach infantry to within 300 yards, or the range of small arms, will now soon be antiquated. With the increasing range of modern muskets, field artillery, to be effective, cannot any longer keep out of musket range; and a gun with its limber, horses, and gunners, forms a group quite large enough for skirmishers to fire at, at 600 yards with the Minié or Enfield rifle. The long-established idea, that who wishes to live long must enlist in the artillery, appears to be no longer true, for it is evident that skirmishing from a distance will in future be the most effective way of combating artillery; and where is the battle-field in which there could not be found capital cover for skirmishers within 600 yards from any possible artillery emplacement?—Against advancing lines or columns of infantry, artillery has thus far always had the advantage; a few effective rounds of grape, or a couple of solid shot ploughing through a deep column, have a terribly cooling effect. The nearer the attack comes, the more effective becomes our practice; and even at the last moment we can easily withdraw our guns from an opponent of such slowness; though whether a line of *chasseurs de Vincennes*, advancing at the *pas gymnastique*, would not be down upon us before we had limbered up, must still remain doubtful.—Against cavalry, coolness gives the advantage to artillery. If the

latter reserve their grape to within 100 yards, and then give a well-aimed volley, the cavalry will be found pretty far off by the time the smoke has cleared away. At all events, to limber up and try to escape, would be the worst plan; for cavalry would be sure to overtake the guns.—Artillery against artillery, the ground, the calibres, the relative number of guns, and the use made thereof by the parties, will decide. It is, however, to be noticed, that though the large calibre has an undoubted advantage at long ranges, the smaller calibre approaches in its effects those of the large one as the ranges decrease, and at short distances almost equals them. At Borodino, Napoleon's artillery consisted principally of 8 and 4-pounders, while the Russians exulted in their numerous 12-pounders; yet the French small pop-guns had decidedly the best of it.—In supporting either infantry or cavalry, the artillery will have always to gain a position on its flank. If the infantry advances, it advances by half-batteries or sections on a line with the skirmishers, or rather in advance of it; as soon as the infantry masses prepare to attack with the bayonet, it trots up to 400 yards from the enemy, and prepares the charge by a rapid fire of case shot. If the attack is repelled, the artillery will re-open its fire on the pursuing enemy until compelled to withdraw; but if the attack succeeds, its fire contributes a great deal to the completion of the success, one-half of the guns firing while the other advances. Horse artillery, as a supporting arm to cavalry, imparting to it some of that defensive element which it naturally lacks altogether, is now one of the most favorite branches of all services, and brought to high perfection in all European armies. Though intended to act on cavalry ground, and in company with cavalry, there is no horse artillery in the world which would not be prepared to gallop across a country where its own cavalry would not follow without sacrificing its order and cohesion. The horse artillery of every country forms the boldest and skilfullest riders of its army, and they will take a particular pride, on any grand field-day, in dashing across obstacles, guns and all, before which the cavalry will stop. The tactics of horse artillery consist in boldness and coolness. Rapidity, suddenness of appearance, quickness of fire, readiness to move off at a moment's notice, and to take that road which is too difficult for the cavalry, these are the chief qualities of a good horse artillery. Choice of position there is but little in this constant change of places; every position is good so as it is close to the enemy and out of the way of the cavalry; and it is during the ebbing and flowing of cavalry engagements, that the artillery, skirting the advancing and receding waves, has to show every moment its superior horsemanship and presence of mind in getting clear of this surging sea across all sorts of ground where not every cavalry dares, or likes to follow.—In the attack and defence of posts, the tactics of artillery are similar. The principal

thing is always to fire upon that point from which, in defence, threatens the nearest and most direct danger, or in attack, from which our advance can be most effectually checked. The destruction of material obstacles also forms part of its duties, and here the various calibres and kinds of ordnance are applied according to their nature and effect; howitzers for setting fire to houses, heavy guns to batter down gates, walls, and barricades.—All these remarks apply to the artillery which in every army is attached to the divisions. But the grandest results are obtained by the reserve artillery in great and decisive battles. Held back out of sight and out of range during the greater part of the day, it is brought forward in a mass upon the decisive point as soon as the time for the final effort has come. Formed in a crescent a mile or more in extent, it concentrates its destructive fire upon a comparatively small point. Unless an equivalent force of guns is there to meet it, half an hour's rapid firing settles the matter. The enemy begins to wither under the hailstorm of howling shot; the intact reserves of infantry advance—a last, sharp, short struggle, and the victory is won. Thus did Napoleon prepare Macdonald's advance at Wagram, and resistance was broken before the 8 divisions advancing in a column had fired a shot or crossed a bayonet. And since those great days only can the tactics of field artillery be said to exist. (See also CANNON.)

ARTNER, MARIA THERESA VON, a German poetess, born at Schnitzan, Hungary, April 19, 1772, died at Agram, Nov. 25, 1829. After the death of her father, who occupied a high position in the Austrian army, she resided for a time at Vienna. While at Vienna, she figured in society as a sort of Madame de Staël on a small scale. She was a lady of great intensity of feeling, and her poetical works are more remarkable for emotional power and poetic sentimentality than for intellectual force or artistic taste.

ARTOIS, once a province of France, now part of the department of Pas-de-Calais. Arras was its capital. Artesian wells derive their name from Artois. In the 8th century it was invaded by the Vandals, and subsequently by the Franks, who ruled over it till A. D. 863.

ARTOT, JOSEPH, a celebrated Belgian violinist, born at Brussels in 1815, died at Paris, July 20, 1845. When a mere child, he was able to execute very difficult pieces on the violin. In the *Conservatoire* at Paris, he won, at the age of 18, the first prize for violin playing. After travelling all over Europe with marked success, he associated himself in 1843 with M'dme Damoreau, a gifted French singer, and they embarked for the United States, where they met with a flattering reception. Although Ole Bull and Vieuxtemps were in America at that time, Artot had his full share of success. His personal appearance made a favorable impression, while the neatness, elegance, and purity of his execution, and especially the melancholy senti-

ment which he imparted to music, secured for him the sympathy of the fairer sex, as well as the golden opinions of the critics. On his return to Europe, his health, which had always been feeble, failed rapidly, and he died at the age of 80.

ARTOTYRITES (Gr. *apros*, bread, *rupos*, cheese), a sect of the Montanists who flourished in the 2d century. They communed with bread and cheese, instead of bread and wine; hence their name.

ARTS, THE FINE. See **ART.**

ARTS, DEGREES IN. The degrees of bachelor of arts, *baccalaureus artium* (B. A. or A. B.), and *artium magister*, master of arts (A. M. or M. A.), are university degrees conferred under that name in Great Britain and America. The origin of these degrees is undoubtedly Italian and French. In modern France the first degree corresponding to the bachelor of arts, is *bachelier des lettres*, and the second corresponding to the master of arts is *licencié*. Previous to the institution of universities in the 11th and 12th centuries, the only academical distinction was the simple one of master and pupil. It should be said, however, that Cazenius II., by the 34th canon of a council held at Rome A. D. 826, mentions the appointment of *magistri* and *doctores*. They were synonymous terms, and this has been held by some to mean masters of arts and doctors of divinity; but the better opinion is that these *magistri* and *doctores* were only pedagogues. The whole number of arts taught in the universities of the middle ages was 7, namely, the *trivium*, consisting of grammar, logic, and rhetoric, and the *quadrivium*, comprehending music, arithmetic, geometry, astronomy. These are the original *artes*, whence our modern British and American graduates derive their titles. *Artidoctor* and *artista* are ancient names for masters of arts. In the university of Paris the first degree conferred was that of *artista*. Gregory IX., who occupied the papal throne from 1227 to 1241, first instituted the inferior order of bachelors, about the derivation of which name the best opinion is that it comes from *bacilla* (little staves), either because the scholars were admitted to their degree by receiving a little staff, or because they were likened to the raw recruits for the militia who were called *bacillarii*, because they practiced with sticks in order to gain a knowledge of the use of the steel weapon. There is no doubt that both of these degrees of arts were conferred at Oxford, in their present form, in the time of Henry III., in the middle of the 12th century. Wood, in his "History and Antiquities of the University of Oxford," quotes the commentary of a certain Whetley upon Boethius, written in the time of Edward I.: "When the said bachelor was created master, the chancellor gave him the badges with very great solemnity, and admitted him into the fraternity with a kiss on his left cheek, using these words: *En tibi insignia honoris tui, en librum, en cucullum, en pileum, en denique amoris mei*

pignus, oculus; in nomine Patris et Filii et Spiritus Sancti. In the British and American universities, speaking generally, a course of 3 or 4 years at the university and the undergoing an examination, are required as conditions precedent to the degree of bachelor of arts. The degree of master of arts is conceded without any further examination; an interval of 2, 3, or 4 years only being required, and the payment of a fee. In Great Britain bachelors of arts generally take their master's degree, but in America, owing probably to the smaller amount of consideration paid to merely nominal distinctions, this formality is more neglected than made use of.

ARUNDEL, BLANCHE, the daughter of Lord Worcester, and countess of Arundel, died in 1669, aged 66. With only 25 men she defended Windsor castle against 1,300 of the parliamentary troops, and finally made an honorable surrender, the conditions of which were disgracefully broken by the victors. Her tomb is in the chapel of the castle.

ARUNDELIAN MARBLES. These marbles derive their name from Thomas, earl of Arundel, under whose auspices they were discovered by William Petty. They are also called Parian marbles, after the town of Paros, where they were supposed to have been found, and are occasionally referred to as Oxford marbles, from the fact that in 1667 the collection was presented to the university of Oxford. This collection, consisting of ancient statues, busts, mutilated figures, altars, sarcophagi, &c., arrived in England in 1627. They are described with great accuracy in Böckh's *Corpus inscriptionum Græcarum* (Berlin, 1843). The most interesting relic of antiquity included in this collection is the celebrated inscription called the Parian Chronicle, or *Marmor Chronicon*, a long, oblong slab of marble, on which was engraved, in capital letters, a chronological account of the principal events in Greece, and particularly Athenian history, from Cærops, 1583 B. C., to the archonship of Diognetus in 264. In the times of Charles I. the marbles suffered much injury, especially the chronological marble. The authenticity of the Parian Chronicle has been called in question by the Rev. I. Robertson, in his dissertation on the subject, published in 1788, and by others, but has been vindicated by many of the most learned men, particularly by Professor Porson.

ARUNS, an Etrurian name for the younger sons of royal or noble houses, while the elder was named Lucorno.

ARUSINI CAMPI, the Arusian fields, the scene of the last engagement between Pyrrhus and the Romans, were probably a tract of plain country, beginning within 2 miles of the city of Beneventum, lying along the river Calor, and traversed by the Appian way. They have been placed by some writers in Lucania, but the best authorities agree in placing the scene of the action near Beneventum.

ARVIRAGUS, a British king who reigned about A. D. 90. He was victorious over Olausius, but soon after treated with the Roman empire, being hard pressed in the siege of Winchester. He afterward married the emperor's daughter.

ARWIDSSON, ADOLF IWAR, a distinguished scholar of Finland, born 1791, at Padasjoki, in the government Tavestehus, where his father held a high position in the church. In 1817 we find Adolf teaching history in the university of Abo, which he had previously attended as student. In 1821 he established the *Morgenblad*, a journal devoted to literature and politics, but the liberal sentiments advanced therein gave umbrage to the Russian government. Not only was the paper stopped, but at the beginning of 1822, the unlucky editor, in consequence of an article contributed by him to another paper (the *Mnemosyne*), was deprived of his position in the university of Abo, and expelled from the country. He betook himself to Stockholm, where he found not only a cordial reception, but an excellent appointment as librarian of the royal library, which he still holds. At the same time he acts as secretary of the Swedish printers' association, and as editor of its journal, which presents a complete and faithful record of the contemporary literary movements in Sweden. One of the most interesting labors performed by him at the Stockholm library is in connection with a catalogue of Icelandic manuscripts published by him in 1848. A valuable addition to the information about Finland is found in Rüh's work on the subject, which was translated into German by Arwidsson, an edition of the *Opera Omnia* of Calenius was brought out under his auspices, and Swedish literature is especially indebted to him for an admirable collection of songs (*Seensaka Fornsänger*), current among the people in the times of Swedish antiquity. They were compiled by him from Råäf's collection, and form an interesting addition to the general literary gallery of Swedish poetry edited by Geijer and Afzelius.—**TRULS**, a Swedish engraver, born at Westervik, in South Sweden, toward 1660, died in 1705. He was a graduate of the university of Upsal, and engaged in his art at one of the museums of that city, when he suddenly removed to Stockholm in company with a beautiful nun, whom he had made his wife, but who died soon afterward. He sought consolation in the study of the Hebrew and other oriental languages, and a curious evidence of his industry is found in his engraving illustrative of the first of the 7 penitential psalms. This work appeared in the same year in which he died.

ARYA, ARYANA, in ancient Persian, **HARIVA**, in the modern, **HEBI**, a name given to various Asiatic countries. In the most general and extensive signification in the remotest antiquity, Arya was the denomination of a great part of western and south-western Asia. In the Sanscrit law of Menu, it comprised the territory between the Ganges and the Indus, the low-

lands of the Indus between the Himalayas or Hindoo Koosh and the Vindhyan, and the country in the mountains at the north, called in Sanscrit Arya-Varta, the land of the brave, which was the cradle of the primitive Aryans. The name of Arya transmitted through thousands of years, was retained by the region between the ancient Parapomusis or Hindoo Koosh, the right bank of the Indus and the Medo-Persian territory, in all of which the Sanscrit was spoken. Another Arya, where the Zend was spoken, and according to the original text in the Zend called Haroiou or Haroyu, the mother of peoples, was, as says the Zend tradition, the 6th Eden created by Ormuzd for his migratory children. In Persian and Macedonian times this Aria comprised Sogdiana, Hyrcania, and Arachosia. The region composing Iran, or Persia, is often called Arya. Some ancient writers mention an Arya, Aryana, in the remote western corner of the Caspian sea, and another on its eastern shores. In Thibet, likewise, the name Arrhia, or Arrhya, was used for a portion of the country. Arya proper, as laid down on the maps, was bounded N. by Bactria, S. by Drangiana, E. by the Hindoo Koosh, W. by the desert of Karamania and the Persian or Salt sea. It is a barren land, with a few fertile strips, in the valleys and along the banks of rivers. Its capital now, as in remote antiquity, is Herat, the ancient Arta-koana, north of the lake of Arya, now called Zurra.—In the theory recognizing the tablelands of central Asia, in Thibet, north of the Himalayas, as the cradle of the races which peopled the greatest part of the globe, the Aryans correspond to the Japhetians, descendants of Japhet, in the Book of Genesis, and still more to what in modern times is called the Caucasian race. This primitive stock probably dwelt originally around the sources of the Oxus and the Jaxartes. Thence they migrated in various directions: some toward the north-west and Europe, others toward the south-west into Sogdiana and into the southern slopes and gorges of the Hindoo Koosh. To this northern locality, as to the primitive home of the Aryans, the Sanscrit and Zend religious and historical traditions all point. Thence the Aryans extended west and south. In the remotest times, the eastern Hindoos called themselves Aryans; but the Hindoos south of the Himalayas and along the Indus preserved that name to a later period. In the broad sense, all the inhabitants of south-western and western Asia, not of Semitic or Oushitic stock, including the Medes, were Aryans. The Aryans were divided into those speaking the Sanscrit and those speaking the Zend. It seems that in the most remote times a race from which the Afghans are descended, interposed itself between the 2 branches of the Aryans. The Zend branch descended west as well as south, as a conquering people, subduing or overthrowing, in western Asia and along the Indus, the Semitic and Oushitic empires, their theogonies and civilizations. Aryi, Aratti, is a name given by the eastern

Hindoo to the north-western tribes, to signify that they were not ruled by kings. In the Zend writings the Aryans are a people chosen and protected by Ormuzd. Their history disappears in the remotest and darkest night of time. More than 23 centuries before the Christian era, these western or Zend Aryans overthrew the Semito-Cushitic empire founded by Ninus or Zohack. They established a new one extending from the Indus to the Mediterranean sea, at times making inroads and devastating Hellas. These depredations, according to some historians, provoked the Trojan war. The Hyksos, who for a time ruled over lower Egypt, were expelled therefrom and migrated toward the west, are supposed by some to have been Aryans. The great Aryan empire to which Cyrus succeeded, or of which he was himself a restorer, or continuator, was never really destroyed, but through various transformations and vicissitudes continues as the Persian kingdom to our times. The tribe of Siahpoosh in the mountains of the Himalayas and that of the Ossets in Caucasus, are supposed to be the direct and unadulterated descendants of the primitive Aryans.—The **ARYAN LANGUAGE**, either as the root or as the substratum of the existing tongues, extends from the Ganges to the Atlantic ocean, from the southern region of the Himalayas to Cadiz, from Zealand to Sicily, and over the whole new world. Its principal branches are: I. The Sanscrit, or the Hindoo. II. The Zend, or the tongue of the land of Iran. III. The Greek, Latin, or Thracio-Pelagian. IV. The Celtic. V. The German. VI. The Slavic. VII. The Lithuanian, and possibly even very distantly the Iberian or Basque, as the primitive Iberians were either a branch of the Celts or the descendants of the Hyksos. The great philological prominence of this primitive language consists in its peculiar flexibility and vitality, by which through more than 45 centuries it has formed the vehicle for the mental development of our race. It has had the power to continually regenerate itself and to bring forth new linguistic creations out of what was decayed and breaking to pieces. It is most harmonious with the ever progressive spirit of man. It extends over the greatest geographical area, and in its varied scientific and artistic development, forms the most perfect and richest family of languages on earth. In the languages issuing from the Aryan, the mental culture of the human species has been best advanced, and is most prosperously developed; and modern civilization by a chain reaching through thousands and thousands of years ascends to this primitive source.

ARZACHEL, or **ARZANEL**, a Jewish astronomer, a native of Toledo, in Spain, lived in the 11th century. He determined the apogee of the sun by 402 observations, fixed the obliquity of the zodiac at $23^{\circ} 54'$, was the author of the "Toledo Tables" which served as the basis of the famous Alfonsine tables, invented an astronomical instrument which bears his name,

and devised an ingenious theory, which was afterward adopted by Copernicus, to explain the inequalities in the apparent size of the sun. His treatises, translated into Latin, are found in the principal libraries of Europe.

ARZAMAS, a town of Russia in Europe, capital of the district Arzamas, government Nizhnee Novgorod, at the junction of the Choka and Tiosha; pop. 8,000. It is old and poorly built, and has 2 annual fairs.

AS, a Roman weight, equivalent to the libra of 12 ounces. The name is probably derived from *as*, one, or the unit. *As* was also a Roman brass coin, originally an *as* in weight, but reduced at successive times, until it weighed but half an ounce; stamped at first with the figure of a sheep, ox, or sow; afterward with the face of Janus, and a ship's prow.

ASAFÆTIDA, also called *stercus diaboli* and *cibus deerum*, a resinous gum derived from the root of the *ferula asafetida*, a plant which grows in the mountains of Persia. It is soluble in alcohol and partially so in water. Its peculiar property is its strong disagreeable odor and taste. This is in the volatile oil it contains and which may be separated by distilling the aqueous or alcoholic solution. *Asafetida* is employed in medicine as an antispasmodic. In hysterics, nervous diseases, chronic colds, and affections of the lungs, and for numerous other diseases, it is found to be a highly efficacious remedy. It is also made use of in Persia as a condiment for flavoring sauces and food. The leaves are eaten and the root is roasted for the same purpose.

ASAHAN, or **ASSAHAN**, a town and district on the north-east coast of Sumatra. The district is intersected by a river of the same name, has tin-mines in the interior, and a population of 70,000. The town lies on the river, about 20 miles from the straits of Malacca, and exports rice, rattans, dye-woods, and horses.

ASAMA-YAMA, a volcanic mountain-peak, near the centre of the island of Nippon, in the empire of Japan.

ASAPH (the assembler), the person appointed by David as chorister in the musical services which he organized in connection with divine worship. The duty thus assigned him descended by a certain succession in his family, constituting them a kind of order (1 Chron. xxv. 1, 2) parallel with the priesthood, though not equal to them in dignity or influence. Asaph is supposed to have composed some of the psalms in our canonical collection, as several of them bear his name. Kitto pronounces him a "master of didactic poetry, excelling alike in sentiment and diction." He was a Levite, and the son of Barachias. He is to be distinguished from 2 others of the same name mentioned respectively in Is. xxxvi. 8, and Neh. ii. 8.

ASAPH, SAINT, a personage of whom very little is known. He was the bishop of a small see in North Wales, about 200 miles north-west of London, established about the middle of the 6th century by Kentigern, whom Asaph suc-

ceeded. The ancient cathedral, which was of wood, was burned down. The second one, more substantially constructed, was nearly destroyed during the wars of Glendwyrr, but was repaired and afterward used as barracks in the parliamentary wars. A new cathedral now occupies the site. The location of the cathedral of Asaph is near the confluence of the rivers Clyde and Elwy, and between them.

ASBEN, in Africa. See AIR.

ASBESTUS, AMIANTHUS (Gr. *ασβεστος*, unconsumable), a mineral of the hornblende family, which occurs in veins in the serpentine and other primary formations. It is remarkable for its structure, which is that of parallel fibres like thread laid closely together. These are so flexible that they can be picked out and woven into cloth. The finer variety, which has the lustre of white satin, is called *amianthus*, from *αμινθος*, undefiled. Cloth made of these minerals is not affected by any ordinary degree of heat, and may be thrown into the fire with no other effect than cleaning it. Such cloth was used by the ancients to wrap the bodies of illustrious dead on the funeral pile for preserving in it their ashes. A shroud of this cloth, containing burnt bones and ashes, was found in the Vatican at Rome in the year 1702. The material was long since applied in Milan to the making of firemen's dresses. The fibres are softened by steam, and the cloth made very coarse. We have the following interesting particulars of trials recently made with it for the same purpose in Paris; which it is the more desirable to record from the fact, that the mineral is abundant in this country, and on Staten island, in New York harbor, is found in bundles of fibres resembling slips of dry wood, some specimens furnishing these fibres of several feet in length. These trials commenced by 8 firemen, with their hands protected by amianthus gloves, carrying a bar of iron heated to whiteness some distance, and without losing their hold of it for more than 8 minutes. A fire of straw and small wood was lighted around a casting boiler, and when it was very hot a fireman, having his head protected by an amianthus hood and a metallic tissue, and bearing a wide shield upon his right arm, was placed in it, the fire being kept intensely hot while he remained. For a moment his head was surrounded by the flame, but the shield served to keep it off. He remained in this position 90 seconds, when the heat became unendurable. His pulse rose from 72 to 152. Another fireman repeated the experiment, protected by amianthus cotton, and remained exposed to the direct action of the flames upon his head for 8 minutes and 47 seconds. In another experiment, 2 long and high piles of wood and straw were erected, with side openings, through which the firemen could escape, if compelled to do so. The 4 men who were to enter the burning enclosure were covered with a new metallic texture; 2 wore an amianthus garment over a dress of cloth, made incombustible by borax, alum, and phosphate

of ammonia; the other 2 had a double garment of prepared cloth, and each of them had amianthus boots, with a double sole of the same substance. Finally, one of them carried a basket upon his shoulders, covered with metallic tissue, in which was placed a child 10 years old, dressed likewise in amianthus. This metallic tissue dress consists of a hood, the edges of which cover the shoulders and left sleeve, the right arm being protected by a shield, and of pantaloons fastened by hooks. Clothed with this armor and the habit of which we have spoken, the fireman can run or stoop easily, and can turn readily by placing one knee upon the ground. The 4 firemen thus attired penetrated to the centre of the flaming hedges, and, walking leisurely, went over it several times. In one minute, however, the child in the basket raised a cry, which caused the firemen to retreat precipitately. But it was found that he had suffered no harm; his skin was fresh, and his pulse, 84 when he entered, had reached only 96. He could undoubtedly have remained much longer, had he not been frightened, from the fact that one of the straps holding the basket to the man's shoulders having slipped a little, he saw the flames, and was afraid of falling. In a few minutes after he was as playful as ever, and experienced no inconvenience whatever. The pulse of the fireman who carried the child rose from 92 to 116. The other 8 men were in the fire 2 minutes and 44 seconds, and came out without having experienced any further inconvenience than great warmth. Their pulses rose from 88, 84, and 72, to 152, 138, and 124 respectively. The fire was very hot during the entire time. Asbestos has also been used for the lining of fire-proof safes and as a filter for chemical purposes. It is, however, in very little demand, though it is by no means a rare mineral in regions of primary rocks. Many localities in the United States furnish more beautiful specimens than are found at Staten Island, but nowhere perhaps is it so abundant, or of as good a quality for weaving. The island of Corsica is noted for the excellent quality and abundance of this mineral.

ASBURY, FRANCIS, a pioneer of American Methodism, and the first bishop of the connection in the United States. He was born in Handsworth, Staffordshire, England, in 1745, died March 31, 1816, in Virginia. He joined the local ministry of the Methodists at the age of 16, the itinerant ministry 6 years later, and was sent by John Wesley as missionary to America at the age of 26, in company with Richard Wright. In 1772 he was appointed by Wesley as general superintendent of the connection in America, an office which he resigned the following year in favor of Thomas Rankin, his senior in the ministry. But at the breaking out of the American revolution, 2 years later, Rankin, being a royalist, returned to England, and thus devolved the superintendency again on Asbury, the duties of which office he exercised through the entire struggle which gave

the colonies an independent political existence. Until the termination of the war, the Methodists of America had considered themselves members of the church of England, and their ministers laymen. They now considered the political changes of the country as separating them from that church, and therefore organized by themselves. Francis Asbury, ordained to the office by 2 presbyters, was constituted the first bishop of the new organization (1784), which office he held till his death, which occurred at the house of George Arnold, in Virginia, in the 71st year of his age, the 55th of his ministry, and the 81st of his episcopacy. During the 30 years of his episcopal labors, he travelled annually from the Androscooggin to the gulf of Mexico, and from the Atlantic to the Mississippi, and ordained not less than 3,000 preachers, and preached about 17,000 sermons. He was truly a man "in labors more abundant." Identified with the religious interests of this country through the two great struggles which have so greatly modified our political and social character, he became eminently American in his sympathies and character, and has left the mark of his native enthusiasm and energy upon the ecclesiastical history of the United States. His remains are now deposited in a vault under the Entwaw street Methodist church in Baltimore.

ASCALON, a city of Philistia, and one of the 5 satrapic seats in the time of the Judges. It lies midway between Gaza and Ashdod, on the Mediterranean, 40 miles W. S. W. of Jerusalem. It fell within the territorial limits of the tribe of Judah, and was conquered by that tribe, but subsequently regained, and, until after the times of Amos and Zephaniah, maintained a partial independence. Ascalon, with Ashdod, became an episcopal see in the 4th century, and has an important place in the history of crusades, until, by treaty between Richard and Saladin (1192), it was destroyed jointly by the Mussulmans and Christians, and (1270) Sultan Bibars filled up the port of Ascalon with stones, to prevent any further attacks by the crusaders. The wine of Ascalon is celebrated by Pliny—as are also the onions. The woes of the prophets on the 4 of the 5 satrapies of Philistia (Zech. ix. 6; Amos i. 8), accurately represent the present condition of those cities.

ASCARIDES (Gr. *ασκαρις*), a term used by Hippocrates, and now applied to 3 kinds of worms which infest the intestines of man: the *sermicularis*, maw-worm or thread-worm, which infests the rectum, or lowest intestine; the *tricocephalus dispar*, or long thread-worm, found in the cæcum or upper part of the large intestines; the *A. lumbricoides*, or large round worm, mostly found in the small intestines. These are not worms properly so called, but belong to the order of entozoa, in the lowest types of animal life, the radiata. The body of the large round worm is long, elastic, and fusiform, or tapering at the two extremities; the anterior being somewhat obtuse and furnished

with 3 tubercles, which surround the mouth. It was formerly believed that each individual intestinal worm united in itself both sexes, but modern observations show that the 2 sexes are distinct, in all the species of ascarides. See ANTHELMINTICS.

ASCENDING NODE, the point in a planet's orbit at which the planet passes to the north side of the plane of the earth's orbit.

ASOENSION. In astronomy, the right ascension of a heavenly body is its distance east of a line drawn from the pole of the heavens through the place of the sun at the vernal equinox. In other words, it is, among the stars, what longitude is upon the earth; and the first point of Aries answers to Greenwich or Washington for fixing a first meridian.

ASCENSION, a south-eastern parish of Louisiana, with an area of about 420 square miles, consisting chiefly of an alluvial plain on both sides of the Mississippi river. A great part of the land is subject to frequent inundations, and is extremely fertile, particularly on the banks of the river. Sugar and maize are the principal staples. In 1850 the productions were 13,488 hogsheads of sugar, 554,975 gallons of molasses, and 868,500 bushels of Indian corn. There were 3 churches, 1 newspaper office, and 300 pupils attending public schools. Capital, Donaldsonville. Pop. in 1850, 10,752, of whom 7,266 were slaves.

ASCENSION DAY, a festival of the Roman Catholic and Episcopal churches, kept in commemoration of the ascension of Jesus, recorded by the evangelist to have happened on the 40th day after his resurrection. It is kept on Thursday, and the day is also called Holy Thursday. It has been observed at least since A. D. 68, and perhaps earlier. In the 5th century Mamertus, bishop of Vienna, instituted a 8 days' preparation for this festival. They are the 8 days immediately preceding Holy Thursday, and are called Rogation days.

ASCENSION ISLAND, an island in the Atlantic ocean, between Africa and Brazil, about 8 miles in length and 6 in width. It has a fort which stands in lat 7° 26' N. long 14° 24' W. It is of volcanic formation, mountainous, and was barren and uninhabited until the imprisonment of Napoleon at St. Helena, when it was occupied by a small British force, who have continued to cultivate and improve it. Its shores supply a vast number of turtles. It serves as a depot for ship's stores and a watering place for ships.

ASOETIO (Gr. *ασκηταις*, wrestlers, or athletes; and *ασκησις*, exercise), a word commonly used by the Greeks to signify the exercises of the athletes during the course of training and preparation for athletic sports and trials of strength. These exercises were intended to inure the body to hardships, and prepare it for displays of force by strict rules of diet, as well as bodily exercises: all excesses of eating and drinking were carefully avoided; all indulgence was forbidden; and abstinence from sexual relations was enjoined.

The term was also applied to those who practised austere rules of virtue. The habits of chastity, poverty, fasting, watching, and retirement practised by the Pythagorean and Stoic philosophers, to train their minds and bodies to hardship and privation, were called *askesis*, or training exercise. Various orders of gymnosophists in Asia and East Africa, were ascetics, who like the present Sanyaseans, Talopoina, and Bonzes, in eastern Asia, exercised their ingenuity in devising methods of self-torture. Among the Jews, the Nazarene Essenes were ascetics. According to Eusebius (Hist. Eccles. ii. c. 23), James the Just, the brother of Jesus, was an ascetic in Jerusalem, before the destruction of that city. The Christians in the 1st century, were more intent on purity of morals, than ascetic exercises. In the 2d century they began to make distinctions between the commands given to all believers, and the advice given to those who aimed at the higher degrees of evangelical purity. The ascetics among Christians, were divided into *abstinentes* and *continentes*. The former abstained from wine, meat, and agreeable food; the latter abstained, moreover, from matrimony, in order to attain to a higher degree of sanctity. Many laymen were ascetics in the early centuries of the Christian era, without retiring altogether from the business of life. Some of them wore the *pallium philosophicum* or philosophic mantle, and were called Christian philosophers. They formed a transition to the life of hermits and monks, which was regulated by the formation of monastic orders, in the 4th century.—**ASCETIC THEOLOGY** is the science treating of the practice of the theological and moral virtues and the counsels of perfection. Ascetic virtue consists in the practice of the maxims of ascetic theology, especially such as require great effort and self-denial.

ASCHAFFENBURG, a city of Bavaria, on the river Main, which at Aschaffenburg is crossed by a handsome stone bridge. It has a fine palace, formerly the residence of the electors of Mentz. Pop. 8,400.

ASCHAM, ROGER, an eminent English scholar, born in Yorkshire, 1515, died Dec. 30, 1568. This man, who has acquired renown, not only for his own abilities but from his illustrious pupils, Queen Elizabeth, Lady Jane Grey, Edward VI., the Brandons, dukes of Suffolk, and other great and honored persons, was of humble parentage, and was brought up by the liberality of Sir Anthony Wingfield, with whose sons he was educated. In 1530 he was placed at St. John's college, Oxford, where his diligence and application, especially to the Greek language, gained him his degree and a fellowship in March, 1534, a small preferment, which, however, made him no longer dependent on his friend and patron, Sir Anthony Wingfield. Ascham early embraced Protestant principles. In 1537 he became a college tutor, and was appointed by the university to read Greek in the public schools. When Henry VIII. founded a Greek lectureship Ascham was appointed to it, and in 1544 was

made university orator, a post which obliged him to prepare all addresses and write the complimentary and business letters to great men. For this his elegant Latinity, and the useful accomplishment of very beautiful penmanship, particularly qualified him. In 1548 Ascham was summoned to the appointment of teacher of learned languages to the Lady Elizabeth, afterward queen. He continued in her household for 2 years, when he quitted her somewhat suddenly from a pique against persons in her establishment. This discourtesy was long remembered by Elizabeth, whose favor he, however, eventually succeeded in recovering. In 1550 he was appointed secretary to Sir Richard Morysine, the English ambassador to the emperor Charles V., which appointment he retained for three years, until the death of Edward VI., and the ambassador's recall. During his absence he travelled in Germany, visited Italy, and wrote the results of his travels in "A Report and Discourse of the Affaires of Germany." Beside his duties as secretary, he read Greek with the ambassador, who was an earnest student. On his return in 1552, he was recommended to Bishop Gardiner, who appointed him Latin secretary to the queen, and on the death of Mary he was continued in his office by Elizabeth, who always required his services as tutor in the languages, in which he read with her several hours each day. Notwithstanding the emoluments of his places and his small pensions and other sources of revenue, he appears to have been in pecuniary difficulties at the time of his death, which was much lamented, and the queen declared "she would rather have thrown £10,000 into the sea than have lost Ascham." He wrote a small treatise on archery, intended as a justification of his love for that sport; it was entitled "Toxophilus," and was dedicated to Henry VIII., who ordered him an annual pension of £10 for it. He also wrote the "Schole-master," a treatise on the study of languages, which was first published by his widow. His letters to Oxford during his absence abroad were also collected and published. His works are published entire, Oxford, 1708, 8vo, and his English writings, London, 1815, 8vo, with a life by Dr. Johnson.

ASCHBACH, JOSEPH, a German historian, born at Höchst, near Frankfort-on-the-Main, April 29, 1801. After having completed his studies at Heidelberg, and officiated as professor at Frankfort, he was invited in 1842 to fill the chair of history in the university of Bonn, which he continues to hold.

ASCHENBERG, RÛTGEB, a gallant Swede, born June 2, 1621, died April 17, 1693, who, by his prowess in the field, from a page gradually rose to the position of a field-marshal, and to the rank of a count. In the campaign of 1655, which brought Poland and Lithuania under the sway of Sweden, he took a distinguished part. At the close of the war he was admitted to the Swedish senate, and devoted the rest of his life to the promotion of the arts of peace.

ASCHERSLEBEN, a circle in Prussia, in the district of Magdeburg, of about 50,000 inhabitants, and a town of the same name, with a population of about 12,000, of whom about 10,000 are Protestants, worshipping in 5 churches, while the rest is composed of Roman Catholics, who have a church of their own, and of Jews, who meet in a synagogue. The town presents a fair array of schools, charitable institutions, and hospitals. The richness of the soil gives a preponderance to agricultural pursuits, but woollen and linen manufactures, and other branches of industry, thrive to some extent, especially potteries and stove manufactures, of which there are not less than 15, all in a high condition of prosperity. In former times the counts of Askanien resided here, and the ruins of their castle, which was destroyed in 1140, are still in existence on the neighboring Wolfsberg.

ASOLEPIADEAN VERSE, in Latin poetry consists of four feet: a spondee, 2 choriambi, and an iambus, thus :

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or it may be taken as consisting of 4 feet and a cæsura : a spondee, a dactyl, and a cæsura and 2 dactyls, thus :

— — | — — — — | — || — — — | — — — |

Example: *Mæcenas atavis editi regibus.*

ASOLEPIADES OF BITHYNIA, an eminent physician who flourished at Rome in the early part of the 1st century B. C. Having little science or skill, he sought to attract public attention by denouncing the principles and practices of his contemporaries, and by asserting that he had discovered a simpler and more efficacious method of treating diseases. Food, bathing, and exercise, were the remedies which he chiefly employed to arrest the progress of sickness. He was remarkable for the assiduous attention which he bestowed on his patients, and not less remarkable for flattering their prejudices and indulging their caprices.

ASCOLI, an ancient city of Italy, in the Pontifical states, on the right bank of the Tronto, 16 miles west of the Adriatic. Pop. 12,000. It has a citadel, is well built, with a Jesuit's college, a museum, library, and a number of private palaces. Its harbor is defended by two forts, and is frequented by coasting vessels.

ASCONIUS, PEDIANUS QUINTUS, a Roman orator and grammarian, the most eminent of the ancient commentators of Cicero, delivered public instructions at Rome under the reign of Tiberius. He was a native of Padua, born a year or two before the Christian era, and died at the age of 85, during the reign of Vespasian. Livy and Quintilian were his pupils, and Virgil his friend and companion. Of his commentaries there remain several considerable fragments, which are written with clearness and elegance, and throw valuable light upon points of history and antiquities, and upon the forms of the Roman senate, courts, and popular assemblies. They have been republished in numerous editions, the best of which is that found in the 5th volume of Cicero's works, as edited by Orelli and Bai-

ter. The text is marred by corruptions and interpolations, and the best critics regard a portion of the commentaries usually ascribed to Asconius as the work of a later hand.

ASCUTNEY, an isolated granitic mountain on the boundary between Windsor and Weathersfield, Vermont. Its summit is 3,320 feet above tide-water, and 3,116 feet above the level of the Connecticut river. From its summit, which is much visited by tourists, is presented an extensive and beautiful prospect of the valley of the Connecticut.

ASEER, or ASIR, an independent state of Arabia, on the borders of Hejaz, Yemen, and Nedjed. It is situated in the interior of Arabia, near the 18th parallel of north latitude, and includes several fine valleys. These extend about 80 miles, and are at an elevation of about 3,000 feet. The lower valleys produce the date, palm, and cotton. The higher, almonds, figs, apricots, and grapes. The people of Ascer are bigoted disciples of Abd-el-Wahab, by whom they were converted to Mohammedanism in the beginning of the last century.

ASEERGHUR, or HASSEER, a town in British India, presidency of Bombay, district of Candesh, 12 miles north of Boorhanpoor. It has a strong fort, well supplied with water.

ASELLI, or ASELLI, GASPARE, one of the most eminent anatomists of his day, celebrated for the discovery of lymphatic vessels in the mesentery, was born at Cremona in 1581, and died in 1625. He came upon his discovery by pure accident, while dissecting a dog killed during the process of digestion. Aselli never spoke in public about his discovery, and one year after his death, in 1626, it was disclosed by some of his intimate friends. G. Hoffmann and Harvey at first contested the discovery. Harvey had already acquired universal fame, and Aselli was comparatively an obscure physician, but eventually Harvey was bound to acknowledge the merits of the new discovery. During the greater part of his life, Aselli practised at Milan. He was buried in the church of St. Pietro Celestina, where his friends erected a monument to him.

ASEN, in northern mythology, the most powerful if not the oldest race of the gods. They included 12 gods and the same number of goddesses, among the most renowned of whom were Odin, Thor, Baldur, Freyr, Frigga, Freyja, Idunna, Eira, and Saga. Their dwelling-place was Asgard, where was a splendid palace in which the council of the gods was daily held. Though this worship was native only to the tribes of Scandinavia, where it was celebrated in the poems of the Edda and in the popular songs, its influence extended throughout ancient Germany, and may still be traced in many German proper names. Thus the German names of the days of the week, which through the Saxons became incorporated into the English language, are derived from this mythology.

ASGILL, I. JOHN, an English lawyer, born about 1650, died in prison, in London, 1788. He made himself remarkable by his political

and religious opinions. In 1699 he was elected to the Irish parliament, but in consequence of the publication of his work, "The possibility of avoiding death, or an argument proving that according to the covenant of eternal life revealed in the Scriptures, man may be translated from hence into that eternal life without passing through death," London, 1700, was expelled from the Irish parliament, and his work publicly burnt in Dublin as blasphemous. On emigrating to England, he was elected member of the English house of commons, but was also expelled therefrom on the charge of atheism. Arrested for debt he passed the last 30 years of his life in the Fleet prison. II. SIR CHARLES, a British general, born about the middle of the 18th century, died 1828. He served in the American war and was taken prisoner at Yorktown. He was to have been put to death by way of reprisals, but was pardoned by Congress at the instance of the French government, and afterward served in Flanders and in Ireland.

ASH, a name applied to 4 different genera of forest-trees. I. *Fraxinus* (*φραγίς*, separation; the wood being used for fences, or from the facility with which it splits), of the family *oleaceae*, Juss., *dioclea diandria*, L. polygamous, calyx minute, 3 to 4 cleft; cord deeply 4-parted or none. Stamens 2 to 4. Pistillate flowers: ovary superior, compressed; 2-celled, with 2 ovules each; capsule with a membranaceous lanceolate wing (*samara*), 1-seeded by abortion; seed pendulous. Most of the species are indigenous in N. America (more than 80° E. of the Mississippi), many in Europe, few in Asia (1 in Nepal). Most are large trees, affecting shady and moist places, banks of rivers, or marshes; they prosper less in barren and bleak localities. The wood of most species is tough and elastic, and is used by wheel-wrights, carriage-makers, ship-builders, for many purposes. The most important species are the following: *F. acuminata* (*Americana*, *discolor*, white A.); leaves pinnatifid, leaflets petiolate, oblong, 3 to 4 pairs and 1 odd one, acuminate, shining, entire or slightly toothed, glaucous beneath, downy when young; grows 60 to 75 feet high. Best wood of all. From Canada to Carolina; believed to be an antidote to snake poison. *F. sambucifolia* (black, or water A.); leaves large; leaflets 7 to 9 pairs and 1 odd, sessile, ovate, lanceolate, rounded at base, rugose, shining, and smooth above, villous beneath on the veins; 60 to 66 feet high. *F. tomentosa* (*pubescens*, red A.); leaflets 7 to 9 pairs and 1; elliptic, acuminate, nearly entire, very long; petioles, and young branches downy. Good wood, more reddish than that of the others. *F. juglandifolia* (*viridis*, swamp A.); leaves very large, leaflets 4 pairs and 1; petiolate, ovate, serrate, glaucous beneath, pubescent on veins; a small tree. Michaux and Nuttall describe 7 more species and some varieties, among which *F. quadrangulata* (blue A.), of Tennessee and Kentucky, attaining 70 feet in height, with valuable wood, and *F. Oregona*, attaining 80 feet, are the most

remarkable. In Europe the principal species is *F. excelsior* (common A.), attaining 90 feet, with excellent wood, though inferior to the *Americana*. On its leaves swarm *cantharides* (Spanish flies), spreading a disagreeable smell. A variety with drooping branches (weeping A.) is grafted on tall stems, and converted into an arbor shading all around. II. *Ornus* (*ορνός*, mountainous), of Persoon (*Fraxinus ornus* L., flowering ash), of the same family with *F.*, but of the class *diandria monogynia*, L. calyx, 4-parted; corol, 2 or 4-parted, segments long, ligulate stamen, inserted, with 2 barren filaments; stigma emarginate; fruit-winged, 1-celled, 1-seeded. Trees of Europe, N. Asia and America. Leaves opposite, unequally pinnate; flowers in terminal or axillary panicles. Grows in shady woods. Among the American species, *O. dipetala* and *O. Americana* are most remarkable. In Europe, *O. rotundifolia* exudes the *manna*, a sweet substance which differs from sugar by not fermenting with water and yeast. It is a purgative medicine and of 3 sorts, the one whitish, which exudes by itself from fissures in the bark, and another brownish, condensed from the juice issuing from cuts made in the tree; this is more cathartic. The best manna is collected in Calabria and Sicily. Many species of *fraxinus* also yield it. The lilac and olive can be successfully grafted on the species of *fraxinus* and *ornus*. III. *Sorbus* (its bark being supposed to be an absorbent in consumption), of the fam. *Pemaceae*, Juss., *icosandria 2-5 pentagynia*. L., classed under the genus *pyrus*. Calyx tubulous, urceolate, limb 5-parted; petals roundish; styles 2 to 5; drupe closed, 5-celled, with cartilaginous patamen; cells 2-seeded. *P.* or *S. Americana* (mountain-ash); leaves pinnatifid; leaflets oblong, lanceolate, acuminate, somewhat serrate; common petiole very smooth; flowers white, in terminal corymbs; fruit globose, yellowish-red, persistent almost all winter. Canada, and northern States. *Pyrus microcarpa* (small-fruited), extends from N. York into Carolina; smaller than the preceding; fruit scarlet. *S. aucuparia* (rowan-tree), common in the forests of N. Europe; grows up to 25 feet; fruit edible, after being frost-bitten and kept in hay for some time. The fruit of other species also affords food to many birds. Only one species (on the Sandwich islands) is known in the southern hemisphere. The fruits of many contain malic acid, and the flowers, bark, root of *aucuparia*, hydrocyanic (prussic) acid. The wood is valuable for many uses, and the branches were employed by the Druids in their rites. IV. *Zanthoxylum* (*ζάνθος*, yellow, *ζύλον*, wood), of the family which is named from it by Juss., *dioclea pentandria* L. *Z. Carolinianum* (prickly ash, toothache-tree), a middle-sized tree with prickly branches. *Z. macrophyllum* (*pirois*, bastard iron-wood), in Arkansas, Florida; from 15 to 30 feet high. This species, as well as others (called yellow wood, satin wood, &c.) of much greater size, have hard, cross-grained wood

ASH, EDWARD, a London physician who died in 1839, and whose name acquired celebrity from its connection with the discovery of the galvanic battery, which became the basis for the construction of the Voltaic battery. Ash communicated the result of his investigations to Alexander von Humboldt, who published them in 1797, accompanied with remarks of his own on the irritability of the fibres. Various scientific essays were, in 1790, contributed by Mr. Ash to the "Speculator," a weekly London paper.

ASH, JOHN, an English Baptist divine, born in 1724, died 1779, was the author, beside some religious publications, of a dictionary of the English language, and of an introduction to Lowth's Grammar, which passed through a great number of editions. He also wrote a work called the "Dialogues of Eumenes." At one period he was coadjutor with Dr. Caleb Evans in the management of an academy at Bristol for the education of theological students of his own persuasion. Subsequently, and until the time of his death, he was pastor of a congregation at Pershore.

ASH-WEDNESDAY, the first day of Lent, called by the fathers of the church *caput jejuniæ*, the beginning of the fast, or *dies cinerum*, ash day, in allusion to the custom of sprinkling the head with ashes. The name of the day is a memorial of ancient manners. To roll oneself in the dust, to cover the head with ashes, was, in primitive times, a mark of profound grief. A man who appeared with his body, hair, and dress covered with dust, announced by such exterior his mourning and affliction. Examples of this are frequent in Scripture, being mentioned in Job, the Kings, the Prophets, and also the Gospels. David, to express the bitterness of his grief, says that he ate ashes like bread. In the first centuries of Christianity, when public penance was imposed, ashes were cast upon the heads of those who were condemned, and they were obliged to stand without the gate of the church, amid the lamentations of the people within. The ceremonies of Ash-Wednesday in Roman Catholic countries are a continuation of this primitive usage. The old linen of the altar and fragments of consecrated wood are burned, and the ashes carefully collected. Before the celebration of the mass, the priest in mourning robes recites penitential psalms, and solemnly blesses the sacred ashes. Then all the faithful approach and prostrate themselves, while the priest marks a sign of the cross with the ashes upon the forehead of each of them, repeating each time the words of the anathema pronounced upon Adam for his sin: *Memento, homo, quod pulvis es, et in pulverem reverteris*: "Remember, man, that thou art dust, and unto dust shalt thou return." The people having thus listened to the sentence of death, and each bearing upon his brow the prophetic ashes, return to their places. The sombre monotony of the ceremony, the silence which

follows it, the confusion of all ranks and the humiliation of all pride which attend this common recognition of the transiency of human life and the fearfulness of destiny, render it one of the gravest and most impressive of all religious rites. It is the overture to 40 days of penitential mourning, and follows immediately the wild excitements of the carnival, the heroes of the delirious and clamorous follies of one day kneeling on the next in silence and contrition around the altar of the church; and thus the utmost frivolity and disorder of a worldly spirit, and Christianity in all its severity and sadness as the veritable law of a fallen humanity, stand in immediate contrast. The use of ashes is omitted by those branches of Protestantism which retain any observance of Ash-Wednesday. In the Anglican church the maledictions denounced against impenitent sinners are read on that day, at the end of each of which the people repeat, Amen.

ASHANTEE, a powerful kingdom of western Africa, on the gold coast, in upper Guinea, bounded on the N. by the Kong mountains, S. by the Atlantic, E. by the rivers Volta and Loka, and W. by the Assinie river. It extends from lat. 5° 0' to 9° 30' N., and from long. 0° 55' E. to 4° 7' W. From comparative obscurity, this kingdom, under its successive rulers, has become a considerable power in Africa, having conquered many of the surrounding tribes, seized upon their territories, and compelled their chiefs to pay tribute. Its history does not reach back further than the commencement of the 19th century, when it began to advance in influence and power under King Osei Tutu. In 1807, while Osei Tutu Kwamina was king, 2 of his tributary chiefs escaping to the Fantee country, were there protected by the Fantees; and when he sent messengers demanding that they should be delivered up, the people, instead of complying, put his messengers to death. Upon a repetition of this offence, the king of Ashantee advanced into the Fantee country, at the head of an immense army, destroying towns and villages, and slaughtering men, women, and children indiscriminately, burning up provisions, and desolating the entire kingdom. The Fantees were followed even to the large seaport towns, and butchered by thousands. The British in the fort of Anamaboe took sides with the Fantees, when the Ashantee army attacked that stronghold also, and would have exterminated the garrison, had not the English governor caused a flag of truce to be displayed. The king compelled Col. Torrance, the governor, to come to the Ashantee camp to adjust the difficulty. In the engagement at Anamaboe alone, it is estimated that 12,000 were slain. In 1817, the Ashantees invaded the Fantee country a third time, reducing the people to such straits for food, that the English authorities deemed it expedient to pay the fine imposed upon the Fantees by the king, to induce him to retire. The incursions into the Fantee country interrupting the

business of the European merchants, the British resolved to send an embassy to the court of Ashantee to negotiate a treaty between the two countries. The treaty entered into stipulated that the monthly payment of 4 ounces of gold, by the English to the Fantees, as a rent for the ground on which the fort stood, should be transferred to the king of Ashantee, by right of conquest, and the governor formally and solemnly acknowledged that Fantee, including Cape Coast, and every other town in the neighborhood, belonged exclusively to Ashantee, the African company reserving judicial authority over such towns as stood in the vicinity of any of the castles. It was further agreed that Mr. Hutchinson, a member of the embassy, should remain at Oomassie as British resident, to see that the terms of the treaty were complied with. The Fantees again rebelled against the king of Ashantee, and were secretly aided by the British, who were anxious for his overthrow. The king was preparing to attack the British again, for their interference, when Mr. Dupuis arrived from England, having been appointed consul to the court of Ashantee. After much difficulty he succeeded in negotiating another treaty, mutually advantageous; but the African company refused to confirm it. As the commander of the British squadron refused to send the commissioners of Ashantee to England, Mr. Dupuis had to set out alone with the treaty, to submit it to the British government for ratification, the king promising to refrain from hostilities for a certain period. Two months after the expiration of that time, Mr. Dupuis not having arrived, the king placed Cape Coast fort under blockade. About the same time the charter of the African company was abolished by act of parliament, and its forts and other possessions transferred to the crown. Sir Charles McCarthy, the newly appointed governor-general of the Gold Coast, misled by the Fantees, who wished to be emancipated from Ashantee rule, and in a great measure ignorant of the nature of the relations between the British and the Ashantees, resolved to chastise them. The king of Ashantee, enraged at the hostile attitude of the English, and smarting under the insults of the Fantees, made extensive preparations for war. Hostilities began by the seizure of a negro sergeant in the British service, by the Ashantees, who put him to death. The king set out with a large army against Cape Coast, and Sir Charles McCarthy, rashly gathering an army of seacoast natives, advanced against him without waiting for a reinforcement of regular troops, under Major Ohisholm. Jan. 21, 1824, an engagement took place across a narrow water-course. Sir Charles kept up a heavy fire during the day; but his ammunition became exhausted, and the Ashantees tried to force their way across the stream. They were repelled by the bayonet; but a party which crossed higher up, intending to cut off his retreat, attacked his force in the flank and rear, and cut them to pieces. Sir Charles himself re-

treated to where the king of Donkera was holding the enemy somewhat in check, and brought a field-piece to bear upon them. It was useless, however, for they came on like an overwhelming torrent, and the British commander and his officers, in attempting to retreat, were met by another party and instantly killed. Mr. Williams, his secretary, was taken captive, and remained a prisoner for some time in Ashantee. Every night they locked him up in a room with the heads of his companions in the war. It is said that the chiefs ate Sir Charles's heart, and dried his flesh and parcelled it out among the lower officers, while his bones were kept at Oomassie as fetiches. After this victory the Ashantees, content with their success, rested, awaiting overtures for a peace. Several other engagements followed, however, within a short time, one of which, against the English at Cape Coast Castle, nearly resulted in success; and there is little doubt that the fort would have been captured, had not smallpox and dysentery compelled the king to withdraw his army. Ultimately he was overawed, and compelled to send his son and his nephew to Cape Coast as hostages, and deposit 600 ounces of gold with the governor as security for his good behavior. Despite these reverses and losses, the Ashantees are still a warlike and powerful people, enjoying as much prosperity as any negro nation in western Africa.—They are, as will be perceived by the preceding sketch, a very barbarous people, even among African nations; but the abundance of their gold, the extent of their kingdom, and their savage and successful wars, have brought them into prominence. They have no military science, however, their success in battle depending not upon their skill, but upon the savage bravery of the overwhelming masses of warriors and slaves, which the Caboceers or chiefs bring together for the defence of the country. The king is commander-in-chief, often leading the army in battle. Among the Caboceers are grades or ranks, more distinct in the capital than in the field. As an instance of their bravery, it is recorded that many of them, after their last defeat by the English, were so mortified, or afraid of being degraded, that they sat down on kegs of powder in sight of the British camp, and blew themselves up. The government of Ashantee is a complete despotism, the king exercising absolute control over the lives and property of all classes. Holding such power, he naturally fears for its permanence, and in consequence keeps up such a system of espionage all over the country, that the remotest act or word of disaffection is promptly reported to him. When a subject is summoned to the king's presence, he goes in fear and trembling, not knowing whether he is about to be rewarded or beheaded. The king is the legal heir to all the property of his subjects, but usually abstains from taking anything but the unwrought gold found among the effects of the deceased. Many rich men take advantage of this to have their gold made into orna-

ments, and distributed among their friends, to keep it out of the king's reach. Once in his life each Cabooseer is allowed to display his wealth in public. On such occasions all the household are decked in rich robes and golden ornaments, and paraded in the streets to martial music, the affair concluding with a feast to the friends of the family. Bowdich says that one man, while he was at Coomassie, displayed gold ornaments equal to 1,600 ounces of gold, or \$28,000. The king is the great property owner, levying a tax of 20 per cent. upon all manufactured gold, and a large percentage upon all gold taken from the mines. All taxes on trade, tribute from conquered provinces, and all the gold found in the market of Coomassie, go into his coffers, making him the wealthiest man in Africa. On every possible occasion he makes a brave show of his wealth, loading his person, and his attendants, with ornaments of pure gold, and displaying the same precious metal in every conceivable way.—Slavery prevails in Ashantee on a large scale, many of the Cabooseers owning 1,000 slaves each. These slaves are prisoners taken in war, men degraded for misconduct, and (by far the largest part) pagan negroes brought from the interior by their Mohammedan captors, and sold into bondage.

While there was a free exportation of slaves to foreign countries, the slave trade was very prosperous here; but since its suppression along the seacoast, slaves have accumulated very largely. The distinction between master and slave is however becoming less marked; and the masters are afraid to abuse their power, believing that if they do, the slaves will bewitch them. Mr. Wilson knew many cases where the slaves held a larger number of bondmen than their own masters.—Polygamy is a favorite institution, a man's importance being rated according to the number of his wives. The king is limited to 3,383, which, with the exception of half a dozen, are dispersed to their plantations during the working season. While in the capital, they occupy 2 whole streets, but are secluded from all but the king and his female relatives. To see one of them even accidentally is visited with death. Adultery is punished by a fine, and violent retaliation on the part of the husband is regarded as mean and degrading. The Ashantee wife is a menial, far below her husband, ministering only to his passions, and providing for his wants. The extent of the population is difficult to determine; it has been estimated at about 3,000,000, including the tributary provinces, and 100,000 men were said to have been slain in their northern wars. The capital, Coomassie, stands in lat. 6° 51' N. and long. 2° 18' W., and its population is variously stated by Europeans at from 15,000 to 100,000. McQueen, in his geographical survey of Africa, adopts the latter estimate, after a careful comparison of the estimates of Bowdich, Dupuis, and others. The soil is fertile, producing yams, Indian corn, sugar-cane, pota-

toes, plantains, bananas, and many kinds of tropical fruit. Cotton, indigo, and coffee are also raised in small quantities; but their cultivation might be indefinitely extended. From the coast to 60 miles N. of Coomassie, the country is covered with a thick forest, through which travelling is extremely difficult, except by the paths or roads leading to the capital. The houses are built of clay, one story high, and thatched with grass. Their walls and doors are painted with a kind of chalk, and the outside of the doors and window-blinds often decorated with grotesque figures. The dwellings of the nobles and great men are built in a hollow square, into which the female apartments open; the roofs project over the sides fronting the street, under which there are lounges, and here the master of the house receives his visitors. The Ashantees are mechanical adepts, and manufacture gold ornaments with much skill and taste. They also tan leather, make swords, pottery, agricultural implements, and cotton cloth, the latter of beautiful patterns and durable quality, weaving it in strips of 4 inches wide, on a loom worked by strings held between the toes. Their commerce with the interior is very extensive, caravans from Houssa, Bornoo, and Timbuctoo occasionally visiting the capital. The exports are mainly gold dust, in which the country abounds (10,000 slaves being employed during the rainy season at the mines on the banks of the Barra, collecting it), ivory, and the jura nut. The mines are very rich, but imperfectly worked; and many of the richest, being sacred to their fetiches, are left untouched. The Ashantees seem to delight in the shedding of blood, and human sacrifices are part of their religious observances. At the festivals of Yam and Adai, —the former commencing early in September, when the yam crop is gathered, the latter occurring tri-weekly through the year,—human blood constantly flows. In Ashantee at least 6 different languages, or dialects of the same language, are spoken, and the Ashantee tongue is described as possessing superior euphony to many of the native languages. The wild animals are lions, elephants, alligators, hyenas, antelopes, deer, and a variety of snakes; the domesticated are principally cows, a small breed of horses, goats, and a hairy kind of sheep. In ornithology there are vultures, parrots, and a variety of small birds of splendid plumage and melodious song. (See Wilson's "Western Africa," New York, 1857.)

ASHBURNE, THOMAS OF, an English Catholic writer, born at Ashburne, in Derbyshire, and lived about the middle of the 14th century. He wrote against the Lollards, and was the author of a treatise in reply to the *Triologus* of Wicliffe. He also wrote a poem in English, with the Latin title *De Contemptu Mundi*.

ASHBURTON, a market town, and parish of England, county of Devon, and 122 miles W. S. W. of London. It has some woollen mills, and returns one member for the house of com-

mons. It is the birth-place of the celebrated lawyer, Dunning, afterward Lord Ashburton, and of the critic and poet Gifford.

ASHBURTON, LORD. See JOHN DUNNING. See also BARING.

ASHBURY, JOSEPH, an English comedian, born at London in 1638, died at Dublin, July 24, 1730. His first appearance as an actor was at Dublin, in the part of Iago, in Shakespeare's "Othello." He went to London, where he won much applause as a comedian; returned to Dublin, and remained a star of the first magnitude in the Irish theatre for the rest of his life.

ASHBY DE LA ZOUCH, a town of Leicestershire in England. Near it are the remains of a fine castle built by Lord Hastings, who was beheaded by Richard III. The town was garrisoned in the civil wars of Charles I. by the king. Its greatest interest lies in its being the scene of the great tournament held in the reign of Richard I., which has been portrayed to the life in "Ivanhoe."

ASHDALAG, a large village of Russian Armenia. It lies on the south slope of the Alaghez mountains, and is surrounded by rich fruit gardens, which flourish in a very mild climate. It is occupied by a population exclusively Christian.

ASHDOD, a city of southern Palestine, lying near the Mediterranean sea, a little north and east of Ascalon, and capital of one of the 5 satrapies of Philistia, after the death of Joshua, and the seat of the worship of Dagon. It fell within the allotment of the tribe of Judah in the territorial division of Palestine, though it was some time before they obtained possession of it, if indeed they ever did. We find that before the captivity the Jews had intermarried with the Ashdodites, for which Nehemiah cursed them. When the Philistines were victorious over the Israelites in the battle of Ebenezer, they captured the ark of testimony and carried it to Ashdod, and set it in the temple of Dagon, whose image twice fell prostrate before it, the second time breaking off the hands and head, so that only the stump of Dagon was left. The Greek name of this city was Azotus, and it is known in New Testament history as the place in which Philip is narrated to have been somewhat mysteriously found immediately after the baptism of the Eunuch, although above 80 miles distant from Gaza, where the transaction took place. The Arabs call this city at the present day Mezdel. It is also known in biblical geography as Esdud. It seems to have been a well-fortified place, and an important military post, from the time of the entrance of the Israelites upon the occupancy of the territory to the days of Psammetichus, who, according to Herodotus, laid siege to it for 29 years. It was also several times besieged, and partially taken by several other kings, as Uziah, and Tartan, and the Maccabean kings, who finally destroyed it, after having maintained a more or less successful struggle for independence since the days of Joshua. It

was afterward partially rebuilt by the emperor Gabinus. According to Robinson, Ashdod stands upon a low round eminence, with trees thick around it like a wood, probably olives, though that eminent traveller only passed within about 10 miles of it. It retains no traces of its former greatness. The heavy woes denounced by Zachariah and Amos on Ashdod, Gaza, and Ascalon, seem to find their historical counterpart in the present miserable and deserted condition of those cities; for at this day there is no king in Gaza, Ascalon is not inhabited, and the pride of the Philistines is cut off.

ASHE, a county forming the N. W. extremity of North Carolina, bordering on Virginia and Tennessee, area 600 square miles. It is a mountainous region, between the Blue Ridge on the S. E. and Stone mountain on the W. It has good grazing portions, but is generally not productive. Organized in 1800; capital, Jefferson; named in honor of Samuel Ashe, former governor of North Carolina; pop. 8,774, of whom 8,183 are free, and 592 slaves. In 1850 this county yielded 210,583 bushels of corn, 6,164 of wheat, 181,487 of oats, 4,904 lbs. of tobacco, 107,757 of butter, and 2,702 tons of hay. It contained 28 churches.

ASHE, JOHN, an officer in the war of the American revolution, and an active statesman in the period of the formation of our government, born in England in 1721, died in North Carolina, in October, 1781. He was 6 years old when his father emigrated to America and took up his abode in Newton, now Wilmington, on the bank of the Cape Fear river, in North Carolina; and there he gleaned his education, and grew to manhood. He was prominent in the politics of the colonies prior to the passage of the stamp act, having been several times a representative in the colonial assembly, of which body he was speaker from 1762 to 1765. The stamp act called forth his vigorous opposition, but he at first hesitated to follow all the opposition measures which the zeal and determination of the colonists suggested, and was as active in resisting the regulator movement of one party as the stamp act of the other. Subsequently he joined with the most zealous and patriotic of the colonists, and became active and influential as a member of the committee of safety at Wilmington, and of the provincial congress, which, it is said, he was the first to suggest, and in which he was an eloquent advocate of republicanism. He joined the army at the first outbreak of hostilities, having led a force to destroy Fort Johnson in 1775; and as brigadier-general he took part in the movements of Lincoln on the Savannah in 1778 and 1779. In the latter year he suffered a severe defeat at the hands of Gen. Prevost, at Brier Creek. He was made a prisoner in 1781, was released on parole on account of sickness, and died soon after. II. SAMUEL, brother of the preceding, and governor of North Carolina, born in 1725, died in January, 1813. He was

a lawyer by profession, and displayed his patriotism and talents in the council of safety, and the provincial congress of North Carolina, of which he was a leading member from 1774 to 1776. In 1777 he was appointed chief justice of his state, an office which he retained till 1796, when he was elected governor of the state. He retired from public duties in 1799. Though he was chiefly employed in civil capacities, yet in some of the emergencies of the times he served as a soldier. III. JOHN BAPTIST, son of the preceding, born in 1748, died in 1795. He entered the army at an early age, and in 1776 was appointed a captain of state troops in the continental service. He served throughout the war, reaching the rank of lieutenant-colonel, and closed his military career at the battle of Eutaw. He was elected to congress in 1787, and in 1795 was elected governor of the state of North Carolina, but died before his inauguration. IV. SAMUEL, brother of the preceding, born in 1763, died about 1830. He was a soldier of the revolution, and was made prisoner at the fall of Charleston, in 1780. After being exchanged he served with gallantry till the close of the war, first under the command of Lafayette, and afterward under that of Greene. He subsequently represented the county of New Hanover for many years in the general assembly of North Carolina.

ASHE, WILLIAM, born at Lisburn, Ireland, about the year 1759, distinguished as a performer on the flute, in which he effected some important improvements, and for which he wrote a number of concertos of considerable merit. He owed his education and subsequent advancement in the world to the generous patronage of Count Bentinck, a wealthy nobleman of Holland, formerly in the British military service.

ASHER, ADOLPHUS, a German bookseller and English author, born about 1800, died at Venice, Oct. 2, 1853. From 1820 to 1825 he lived in England, where for several years he was clerk of the Rothschilds. He afterward engaged at St. Petersburg in the diamond trade, and subsequently in 1827, while engaged in speculation at a Leipzig fair, he was determined by accident to become bookseller at Berlin. He became intimately acquainted with the book trade, and supplied a considerable portion of the rare works of the British museum, and the royal library of Berlin. Although a German, he had a partiality for the English language, in which he wrote his own works. His edition of the travels of Benjamin of Tudela is the best existing.

ASHES, the solid products of combustion, the residue of the burning of vegetable matters, coal, and animal substances. The term volcanic ashes is commonly applied to the finely comminuted dust ejected from volcanoes. This use of the word, according to Bory de Saint-Vincent, is incorrect, the substance, by his examinations, proving to be not the products of combustion, but fine particles of lava ground to dust. Ashes are

composed of earthy matters and salts, and vary in quality and quantity with the materials that furnish them. Of wood ashes, even the different parts of the same plant furnish different quantities, and ashes of different compositions. The soil itself has an influence upon the kind and amount of materials taken up by the plants. Nearly all the substances found in the soil enter into the composition of vegetable matters, and are found in their ashes. Alumina is, however, very rarely met with. No inorganic substances found in the ashes of plants come from any other source but the soil. Of the portion of wood ashes soluble in water, and removed from them by leaching, or lixiviating, the greater part consists of the carbonate, silicate, sulphate, and muriate of potassa. Of the insoluble portion (leached ashes), carbonate of lime commonly forms about one-half. The remainder is mostly silicate and phosphate of lime, oxide of iron, and salts of magnesia. It is not supposed that the bases were combined with carbonic acid in the plants, but with organic acids, and that these were replaced by carbonic acid by the process of combustion. Plants that grow in and near the salt water contain soda instead of potassa, deriving it from sea salt. The following examples show how the quantity of ashes varies with the wood: From 1,000 parts, by weight, of oak, well dried, Kirwan obtained of ashes, 18.5 parts; from elm, 23.5; willow, 28; poplar, 12.2; ash, 5.8; pine, 3.4. The bark furnishes more ashes than the solid wood, and the branches than the trunk. Peat, and coal ashes, contain a large proportion of alumina; oxide of iron, carbonate and sulphate of lime, are also found in them. The principal uses of ashes are for making soaps, and for enriching land. The soluble salts of potash are dissolved out from them, and oil, or fatty matters, added to the alkaline, to produce the soap. The residue is a valuable manure, but evidently inferior to the ashes before the potash was extracted. Pot and pearl ashes are the salts of potash extracted from wood ashes. The name potash is at once traced to the method of its preparation from the extract of the ashes boiled down in iron pots. Barilla, or soda-ash, is a similar product of sea-plants, soda replacing the potash. It was formerly largely imported into this country, but is now excluded by cheaper preparations of soda direct from sea salt.—Ashes are sometimes used with lime and sand, to increase the strength of the mortar, and prevent its cracking. Bone ashes contain much phosphate of lime, the cause of the fertilizing properties of bones. Phosphoric acid, and phosphorus are prepared from these ashes. They are also used to make the "cupels," in which argentiferous lead is melted and oxidized for obtaining the pure silver. The cupels are merely bone ashes made into a paste with water, or beer and water, and then moulded and dried. In distilleries, ashes find an extensive use for the rectification of the alcoholic liquors, the alkaline matters neutralizing any acids that may be present, and thus

preventing their volatilization. It is a common impression that their great consumption in American distilleries is to give strength to the liquors after their dilution with water, and this is naturally confirmed by the violent caustic quality, not unlike that of the ley of ashes, for which much of the common whiskey of the country is remarkable. Ashes mixed with salt make a strong cement for iron pipes. Cracked pipes repaired with it bear as heavy pressure as new pipes. The cement acts on application of heat of 600°.—**SHOWER OF ASHES**, a phenomenon which frequently accompanies the eruption of a volcano. Quantities of matter resembling fine gray or black ashes are thrown aloft from the crater to prodigious heights, and borne by the winds to an astonishing distance. On the eruption of the volcano Tomboro, in the island of Sumbawa, east of Java, in the year 1815, a shower of ashes fell for 19 hours in succession. An English cruiser, 100 miles away from the island, was surrounded by the cloud, and received from it an addition to its freight of several tons' weight, and a Malayan ship was covered to the extent of 8 feet in depth. The ashes fell upon the islands of Amboyna and Banda, the latter 800 miles to the eastward, and this apparently in the face of the south-east monsoon, which was then blowing, but really carried by a counter current, the existence of which, in the higher regions of the atmosphere, was then first established. A similar phenomenon was observed in the eruption, in January, 1885, of the volcano Coseguina, on the south side of the gulf of Fonseca in Guatemala. Its ashes were carried to the eastward, over the current of the trade winds, and fell at Truxillo, on the shores of the gulf of Mexico. Ashes from Etna were deposited in Malta in 1829; and in the year A. D. 79, the cities of Herculaneum and Pompeii, which had 16 years before been destroyed by an earthquake, were buried beneath the showers which fell from the neighboring volcano of Vesuvius.

ASHLAND, a county in the N. E. part of Ohio, area 840 square miles. Its surface is hilly and undulating. The soil is of unsurpassed fertility, and especially productive of wheat, grass, and fruit. It is crossed by the Ohio and Pennsylvania railroad. It is well supplied with motive power by the Black Fork and Lake Fork rivers, which unite and form the Mohican. Organized in 1846; capital, Ashland; pop. 24,000. In 1850 this county yielded 446,818 bushels of corn, 338,718 of wheat, 273,610 of oats, 64,976 of potatoes, 22,826 tons of hay, 205,566 pounds of wool, and 368,988 of butter. It contained 44 churches, 2 newspaper establishments, 4,295 pupils attending public schools, and 70 attending academies and other schools.

ASHLAND, the home of Henry Clay, the eminent American statesman. The estate, situated about 1½ mile from the city of Lexington, in Kentucky, consists of about 600 acres, of which 200 are taken up by a noble park, charac-

terized by Lord Morpeth, who once passed several days there, as the nearest approach to an English park of any in the United States. The remainder is under a high state of cultivation, producing excellent crops of wheat, rye, hemp, &c. The house, which has been taken down since the decease of Mr. Clay, was a plain and modest structure, two stories in height, and surrounded by beautiful shade trees. This unpretending mansion was the home of Clay during more than 40 years, and after his death passed by public sale into the hands of his eldest son, James B. Clay, by whom it has been rebuilt.

ASHLARS, blocks of stone from the quarry. Sawed ashlar is the slab, as they come from the mill, prepared for facing the walls of buildings. The term is most commonly limited to this application. Tooled ashlar is slab marked with parallel flutings. They are often used in basements, and set so that the flutings are vertical.

ASHLEY, a county of Arkansas, bordering on Louisiana, and bounded on the W. by the Sabine and Washita rivers; area, 870 square miles. The surface is undulating, and highly productive of Indian corn, cotton, and tobacco, the latter being yielded in prodigious quantity. Capital, Fountain Hill; pop. 2,058, of whom 1,414 are free, and 644 slaves. In 1850 there were raised 65,787 bushels of corn, 14,979 of sweet potatoes, 689 bales of cotton, and 42,130 pounds of tobacco, the greatest quantity of that article produced in any one county in the state. It contains 10 churches, and 150 pupils attending public schools.

ASHMOLE, **ELIAS**, an English antiquary, and founder of the Ashmole museum at Oxford, born at Lichfield, May 23, 1617, died May 18, 1692. He was brought up for the law, and practised as a chancery solicitor. In the civil wars he quitted London and settled at Oxford. He adopted the royalist cause, and became captain in Lord Ashley's regiment of horse; and on the breaking of the king's cause by the battle of Worcester, he withdrew to Cheshire and abandoned politics altogether, until the restoration, when he obtained favor in the sight of the merry monarch, who bestowed upon him various honorable and lucrative offices. He was Windsor herald, commissioner of excise, and secretary of Surinam, with other appointments connected with those he already held. He married thrice: Eleanor Mainwaring, in 1638, lady Mainwaring, widow of Sir Thomas Mainwaring, in 1649, and on her death, in 1668, Elizabeth Dugdale, daughter of Sir William Dugdale. He was for a time the intimate associate of the astrologers and alchemists Lilly, Booker, Sir Jonas Moore, and Wharton, and in 1650 edited and published the arcanum of Dr. Dee, a work on Hermetic philosophy and the philosopher's stone. In 1658 he announced that he had abandoned astrology and alchemy in his "Way to Bliss," a treatise on the philosopher's stone. He compiled a collection of the various unpublished writers on chemistry, which

in 1652 he published under the title of *Theatrum Ohyimicum Britannicum*. In 1650 he made a catalogue of the coins in the Bodleian library, and in 1659 was so fortunate as to obtain from the younger Tradescant the museum of coins and curiosities which he and his father had collected at their house in Lambeth near London. In 1679 he presented to the king a history of the order of the garter, which he had long been preparing, and for which he received from the king a grant of £400. In 1679 his chambers in the temple were burnt, and the greater part of his library, with 2,000 ancient and modern coins, and destroyed a valuable collection of other highly interesting and curious articles. He had proposed to the Oxford authorities to present them with his collection and library, if they would provide a suitable building, and in 1682 the Ashmolean museum was opened.

ASHMUN, JEHUDI, agent of the American colonization society, born in Champlain, N. Y., April, 1794, died Aug. 25, 1828. He graduated at Burlington college in 1816, and after preparing for the ministry, was chosen a professor in the theological seminary at Bangor. Removing soon after to the District of Columbia, he engaged in the service of the colonization society, at first as editor of a monthly journal, but sailed for Africa, June 19, 1822, to take charge of a reinforcement for the colony of Liberia. Upon his arrival he found himself called upon to act as the supreme head of a small and disorganized community surrounded by numerous enemies. The duties of legislator, judge, soldier, and commander, were thrown upon him, and in a short time he so reanimated the spirit of the colonists, and restored their discipline as to enable them about 8 months after his arrival, by the aid of some fortifications he had constructed, and his own extraordinary bravery and conduct, to repel a surprise from a party of 800 savages, and to defeat them entirely a few days later when they had returned with increased numbers. When obliged by ill health to abandon the country, March 26, 1828, he left a community of 1,200 freemen. He arrived at New Haven, where he is buried, Aug. 10, a fortnight before his death. He not only saved the existence of the colony at Liberia, but established for it through his character an important influence over the surrounding tribes.

ASHMUN, JOHN HOOKER, professor of law in Harvard university, born in Blandford, Mass., July 8, 1800, died in Cambridge, April 1, 1883. He was entered at Williams college, but graduated at Harvard in 1818. He attended to mathematics above any other branches of the university studies, but soon devoted himself with the greatest zeal to the study of law. Here he achieved a rapid success, and upon his admission to the bar, he soon reached the front rank of the profession. He became associated with Judge Howe and Mr. Elijah H. Mills in conducting a private law school at

Northampton, and when the law department was organized at Cambridge in 1829, the first appointment was tendered him by a unanimous vote of the corporation. He held this situation until his decease, conducting his instructions and lectures with remarkable ability. His early death, in the opinion of those who were best able to judge of him, extinguished the promise of legal eminence unsurpassed, if not unequalled. His health had not been such as to enable him to put forth his whole intellectual strength, nor did his efforts receive any assistance from graces of manner; but his knowledge of legal science was profound and accurate, and his comprehension of the principles of law so perfect that he seemed to arrive at his decisions by an intuitive operation of the mind. Although the vigor of his reasoning powers was great, the accuracy of his conclusions was still more so—an unerring lamp appeared to lead him through the legal labyrinth. Even at his early age he was considered fully equal to the highest stations and responsibilities of the profession, and by his admirable private character had won a high degree of public esteem.

ASHTABULA, a county in N. E. Ohio, on the borders of Lake Erie and Pennsylvania, which was settled by natives of Connecticut in 1796. The surface is level, the soil clayey, and adapted to grazing purposes. Grand and Conneaut rivers both run through it. The county contained, in 1850, 28,766 inhabitants, and produced 56,618 tons of hay, 704,291 pounds of butter, 185,203 pounds of wool, 267,209 bushels of corn, and 189,478 of oats, which, with cattle, form its chief staples. It has railroad communication with Cleveland and Erie, and contained 55 churches, 8 newspaper offices, 4,688 pupils in the public, and 280 in private schools, at the date of the last census. Capital, Jefferson.

ASHTOLA, an uninhabited island of the Indian ocean, lat. 26° 8', long. 68° 48' E., 19 miles from the Mekram coast in Beloochistan. Its shores abound in turtle.

ASHTON-UNDER-LYNE, a manufacturing town and parish of England, county of Lancaster, on the Tame, 6 miles from Manchester. It is well situated for manufactories, of which there are 84 in active operation, spinning and weaving calicoes, working 8,588 horse-power, and occupying the labor of 14,500 work people. It has barracks, permanently occupied by a battalion of infantry. It sends one member to the house of commons. It is abundantly supplied with coal, and communicates with Manchester, Huddersfield, and Derbyshire by canals. It contains a large church of the time of Henry V., and places of worship for Methodists, Baptists, Unitarians, Roman Catholics, Moravians, and Jews. Pop. 30,676.

ASHTORETH, called by the Babylonians Mylitta, and by the Greeks, Astarte, the great female deity of the Syro-Arabian nations, bearing the same relation to their great male divinity, Baal, which the Hera or Juno of the

Greeks and Romans bore to Zeus, or Jupiter. By Ashtoreth was originally meant the moon—"the queen of heaven"—and subsequently the planet Venus, and perhaps other celestial bodies. Under the name of Ashtoreth is supposed to have been worshipped one of the great agents by which animal life is preserved and perpetuated—the principle of conception and parturition. This goddess was variously represented in different ages and countries. In Canaan she was adored under the image of a heifer or calf. In Phœnicia she was at first represented by a white conical stone; afterward with the head of a bull or cow; and ultimately as a human being with a thunderbolt in one hand, and a sceptre in the other. The worship of Ashtoreth was sometimes performed in shady groves, sometimes in stately temples. Cakes made in the shape of a crescent, and male kids, are said to have been the offerings in which she most delighted. Eunuchs dressed in feminine attire, or women, were her favorite priests; and many of the rites in which they indulged at her altars were of the most lascivious and abominable character. The dove, the crab, and the lion, among animals, and the pomegranate among fruits, were sacred to Ashtoreth. The idolatry of Ashtoreth was introduced into Israel in the days of the judges, and was not finally extirpated till the reign of Josiah.

ASHWORTH, CALER, D. D., an English dissenting clergyman, born in Lancashire in 1723, died July 18, 1775. At the age of 18 he became a student in the seminary at Northampton, presided over by Dr. Doddridge, and having passed with credit through the course of study, was in 1746 ordained minister of a dissenting congregation at Daventry, a position which he retained till his death. He was recommended by Dr. Doddridge as the person best qualified to take his own place in superintending the education of young men for the dissenting ministry; and therefore, after the death of Dr. Doddridge in 1751, Dr. Ashworth became his successor as principal of the institution, and under his care several noted preachers and writers on theology were educated. Dr. Ashworth preached the funeral sermon of Dr. Isaac Watts.

ASIA, the largest continental division of the globe, includes a surface of about 17,500,000 sq. miles. The greatest breadth from N. to S. is 5,800 miles; the greatest length from E. to W. is 7,600 miles. It has a coast line of 35,000 miles, or, deducting the northern coast, in the Frozen ocean, the coast outline is about 30,800 miles. This amount gives a proportion of 459 sq. miles of surface to each mile of navigable coast line; a very large proportion of which belongs to the southern and eastern portions. The continent is bounded N. by the Arctic ocean, S. by the Indian ocean, E. by the N. Pacific ocean, W. by Europe, and S. W. by Africa, and is comprised between lat. $1^{\circ} 15'$ and $78^{\circ} 20'$ N., and long. 27° and 140° E. The surface ascends irregularly, but with a

steadily increasing elevation, from the outer line toward the centre. In central Asia the highland plains are upheaved to from 4,000 to 12,000 feet. These immense plateaus are surrounded on all sides and edged (so to say) by mountain ranges of the grandest proportions. They are subdivided by minor ranges into smaller regions. On the north and north-west, there is a prodigious extent of unbroken surface at the sea level, stretching from east to west, and from the Frozen ocean south as far as the Altai mountains. Before considering the table-lands of Asia in detail, it will be more convenient to describe the mountain systems. The number and extent of the mountain ranges whose various courses embrace every point of the compass, and their frequent breaks and want of continuity, throw some difficulty in the way of an attempt to give a simple and brief, yet comprehensive view. There seem to be 3 grand systems, that of the Altai, of the Hindoo Koosh, and of the Himalaya. The 2 latter are usually considered as one system; but we think there are sufficient reasons for dividing them. The Altai system belongs to central Asia, and runs in a mean line with the 50th parallel of N. latitude. It is the northern limit of the great eastern upland plateau. The Altai range, after running east from about 70° E. long., as far as 110° E., joins the great chain of the Aldan (called also the Stanovoi, or Yablonnois), which runs N. E. to the Arctic circle. Thus, an unbroken line is formed from the edge of the great Kirgheez steppe to Behring strait, sometimes in 2 and sometimes in 3 parallel lines, with extensive offsets and spurs running north and south. The centre of the great east and west chain, of which the Hindoo Koosh, or Indian Caucasus, is the connecting link, lies near the intersection of the 35th parallel and the 78d meridian. The towering peaks of the Hindoo Koosh connect the Kuen Lun, or Kwen-lun, and the Peling mountains of the east with the Parapomisan, Elbrooz, and the Armenian mountains of western Asia. This second great system traverses Asia throughout its entire length, from the Dardanelles to the Yellow sea. It separates the great desert of Gobi from China proper and Thibet, and divides the steppes of Toorkistan, or Independent Tartary, from the upland plateau of Iran.—The system of which the Himalaya is the colossal centre, takes a mean course N. W. and S. E., running from the extremest point of the Malay peninsula far into central Asia. The true Himalaya has a range of about 1,500 miles, with a breadth of 250. From about the point of intersection of the 28th parallel of latitude by the 90th meridian it takes a curvilinear mean N. W. direction until it strikes the Hindoo Koosh at an acute angle. Here the complication forms a group of the most stupendous peaks in the world. A modern traveller says: "I have counted here upward of 20 peaks exceeding 20,000 feet." Thence continuing a northern course, under the name of the Bolor, or Belor Tagh (a region of savage wilds, of which very little is known), the

system reaches the borders of Toorkistan. At this point it is joined at right angles by the Thian Shan mountains, which stretch far away E. into the desert of Gobi and upland plains of Mongolia. The southern extremity of the true Himalaya is connected with no less than 5 chains, which radiate from it fanwise, and traverse the peninsula of Indo-China with remarkable parallel regularity. Before these immense monuments of the earth's subterranean forces all other mountain systems, except the Andes, sink into comparative insignificance. And yet other extensive ranges are to be enumerated. The Chang-pe Shan, a coast chain of Mantchooria, and the Corea, running N. E. and S. W., the Jushan and Kinyan, running N. E. and S. W., in the north-eastern part of China and Chinese Tartary, the Nanling in China proper, and the Vindhyan and the eastern and western Ghats of Hindostan. In western Asia we have also a chain on the Arabian peninsula, Mount Sinai, and the mountains of the Syrian desert, Lebanon, Carmel, and the other mountains of Syria and Palestine, and the Taurus, in Asia Minor, the Caucasus, between the Black and Caspian, and the Ural, running north from the Caspian to the Frozen ocean, belong to Europe equally with Asia. A chain of remarkable character and great extent branches off south from the extremity of the Aldan mountains, in the north-east of Asia, near the Arctic circle. This extraordinary chain traverses the length of the Kamtchatka peninsula, and reappears from the ocean depths in the long succession of the Koorile islands, divides, or rather forms, the Japanese islands, again appears in the frequent intervals of the Loo Choo islands, terminating at the island of Formosa, nearly east of the Nanling mountains. In Kamtchatka the peaks of this chain are 14,000 feet high, and among them are several active volcanoes. It forms an outer ocean rampart to the eastern shores of the continent, enclosing between it and the mainland the seas of Japan and Okhotsk.—The elevated table-lands of Asia are, the great oriental plateau and the western plateau, or plateau of Iran. The great oriental plateau includes the upland plains of Mongolia and the great desert of Gobi, or Shamo, and part of Chinese Tartary. It extends from the Altaian chain, on the north, to the Kuen Lun (the continuation of the Hindoo Koosh) on the south. On the east it is separated from the alluvial lowlands of China proper by several mountain chains, while the Bolor Tagh, on the west, divides this region from the lowland plains of Independent Tartary, or Toorkistan, and from the lesser plateau of Iran. This immense series of upland plains comprises a surface of 7,500,000 sq. miles, or twice the area of Europe, at an elevation never less than 8,000 feet, and often far higher, above the sea. Its general character is a barren, dreary waste, exposed to a scorching summer sun, while in winter the cold, inseparable from a high altitude, is rendered still more insupportable by the bleak winds that blow from the north. South of the

Kuen Lun, the southern mountain rampart of the great plateau, the surface slopes upward into the still loftier mountain valleys of Thibet, a district which attains an elevation of 12,000 feet, stretching away to the foot of the towering Himalayas. On the south-east the great plateau is bounded by several mountain chains, and the territory of China proper descends by a succession of easy terraces to the margin of the Pacific ocean. On the north-east the land slopes downward, in like manner, through the steppes of Mantchooria, until the desert is checked by the Ohang-pe Shan mountains, whose eastern declivities descend abruptly—sometimes perpendicularly—to the ocean level. Northward, after passing the lofty chain of the Altai, the surface rapidly sinks to the level of the Siberian plains and steppes, the abode of a scanty population of wandering tribes. On the south-west the great plateau is bounded by the terrific and savage barrier formed by the Hindoo Koosh and Bolor Tagh, beyond which we find the western upland of Iran.—The 90th meridian, which may be taken to represent the mean north and south axis of Asia, coincides with the line of greatest elevation and depression, not only of the oriental plateau itself, and the mountains which traverse it, but also of the great Himalayan boundary chain. Commencing at the head of the bay of Bengal, this section line rapidly ascends through the valley of the Brahmapootra and Bootan, and, scaling the sides of Himalaya mounts to the table lands, ascending at once to the mighty summit of Kunchinging, where it descends into the mountain valley of Thibet, 12,000 feet above the level of the sea. It cuts the Kuen Lun, the Thian Shan, the great and little Altai, and descending through Siberia along the valley of the Yenisei, reaches the Arctic ocean. At the intersection of this meridian by the 85th parallel, the great plateau, owing to the presence of the lowlands which here push far into its outline, is at its narrowest breadth. The western plateau, or plateau of Iran, is of an oblong shape. It commences about 70° E., extending west from the Hindoo Koosh and the Suleiman mountains as far as the shores of the Mediterranean, and north from the mountains which skirt the Persian gulf and Arabian sea to the lowlands of the Aral and Caspian. It includes a surface of 1,700,000 sq. miles. Its altitude is considerably lower than that of the eastern upland, nowhere exceeding 4,000 feet above the level of the sea. The physical character of the surface is greatly varied: the salt and sandy deserts of Khorassan, and Kirman, and Syria; the broken and diversified surface of Irak Azerbaijan and Koordistan; the rich alluvial plains of Mesopotamia, and the succession of hill, valley, and plain, which distinguish Anatolia and Syria. In the interval between the head of the Persian gulf and the southern shore of the Caspian, its region is greatly narrowed, less than 6° of latitude intervening. Both east and west of this line the plateau expands to its full width. The eastern

portion of this plateau is separated on the south and south-west from the ocean by a range of mountains running parallel with, but at some distance from, the coast. The strip between these hills and the sea is intensely hot, and the climate highly deleterious. On the north the Elbrooz terminates the table-land, and its northern declivities lead down to the deep depression of the Caspian. Between the Caspian and the Black sea the mountains of Armenia and the Caucasus raise an impassable boundary between the table-land and the steppes of the Don and Volga. On the south-west the plateau is separated from the highlands of Arabia by the lowlands west of the Euphrates. In general, the western plateau is deficient in water, but in the hilly districts there is a good supply of this indispensable agent to vegetation, and the labor of the husbandman is well repaid. In its climate, productions, and the variety of the human race by which it is inhabited, the western plateau presents points of analogy to Europe which are wholly wanting in the eastern plateau. This region includes the modern empires of Turkey in Asia, Persia, Afghanistan, and Beloochistan. Its soil is famous in history, and was the site of all the great oriental empires of antiquity, excepting the Indian and Chinese; on the east the Aryans, in the centre the Medes and Persians, Assyrians, and Chaldeans. Beyond them to the west were the kingdoms of Israel and Judea, with the mountain tribes, the Syrians, and the great trading communities of the Phœnicians, including the renowned cities of Tyre and Sidon. In the north-west were the wealthy, populous, and civilized Greek colonies of Asia Minor.—The lowlands of Asia are vast plains, as marked in character as the uplands which they surround. Their type is great depression of the surface, often below that of the ocean, with a remarkable uniformity of this level, affording but little fall to the great rivers which meander sluggishly to the sea. The great lowlands are the steppes of Independent Tartary, the plains of Siberia, the alluvial plains of China, the plains of Siam, and the lowlands of northern India, between the foot of the Himalayas and the Deccan. The primeval steppe north of the Caspian and Aral, the habitat of the Kirgheez Tartars, with their flocks and herds, is below the level of the Atlantic. In summer it is hot and dusty, in winter, cold and bleak. In spring and autumn an abundant, but thin pasturage covers it, soon to be dried up by the hot winds and the want of water. The peculiar atmospheric influences of the region prevent the growth of trees and the operations of agriculture. The inhabitants are nomads, among whom the usages or arts of civilization have made little progress. From the land of the Kirgheez the Siberian wastes extend north and north-east to the Arctic ocean and to the eastern shores of Asia, comprising an area of 7,000,000 sq. miles, equal to that of the eastern plateau. On the north the land is covered with impassable marshes, caused by the

overflow of the great rivers, the progress of whose waters to the Northern ocean is dammed up by the accumulated ice of the Arctic circle. In this region we find the maximum of cold, and so obdurate is the general character of the soil that a few valleys interspersed amid the spurs of the Altai in southern Siberia, which produce scanty crops of grain and fruits, have a reputation for fertility. In forcible contrast with the inhospitable plains of Siberia are the rich alluvial lowlands of China, which extend their fertile limits on the east. The facilities of communication afforded by great tidal rivers, the exclusion from the back country by the natural barriers of mountain and desert, have turned the Chinese upon themselves, and here we have the most stationary and most unchangeable among civilized nations. The lowlands of China are terminated to the south by the broken surface of Coochin China. But west of Coochin, Indo-China spreads out its fertile expanse, intersected by 5 fanlike chains, whose rich valleys present a soil of boundless productiveness. The lowland plain of Siam, a dead level, covered with a large amount of surface water, is particularly suited for those plants which require an unusual quantity of moisture. The plains of India extend from the foot of the semicircle formed by the Himalaya, Hindoo Koosh, and Suleiman, south as far as the table-land of the Deccan, which forms the southern part of the peninsula. The Indian lowland and the strip of coast line between the shores of the Persian gulf and the upland of Iran, complete the general view of the lowlands. Outside the limits we have thus endeavored to sketch, lie the elevated table-lands of the Deccan, on the south of Hindostan, and the table-land of the Arabian peninsula. The Deccan table-land is of triangular shape, formed by the Vindhyan, on the north, and by the eastern and western Ghauts. It has a mean elevation of about 3,000 feet, and consists of plains, ridges, and single eminences. On the east, the Ghauts decline in a series of terraces to the sultry Coromandel coast and bay of Bengal. On the west, the Ghauts slope down to the Malabar coast, which is bolder and covered with forest growth.—The Arabian table-land commences at the south-western edge of the Iranian plateau, from which it is separated by the plains of the Euphrates and the Syrian desert. The Nedjed, or northern Arabia, is a dry climate, resembling that of Persia, exposed to considerable thermometrical ranges. The Arabian peninsula consists of a table-land of considerable elevation, a parched-up and barren desert, subject to a blazing sky in the daytime, while by night the elevation makes the desert fire by no means unwelcome to the traveller. On the south, the land slopes to the more fertile plains of Yemen, which, though not really of remarkable luxuriance, is "the happy land" by comparison with the upland desert. We must also notice the extraordinarily depressed plain in the western part of the Iranian plateau, in which the Dead sea and

the sea of Tiberias are situated. This is altogether of an exceptional character, and seems to be unconnected with any other natural arrangement of the surface. The shores of the Dead sea are the lowest point on the Asiatic continent.—The Asiatic rivers are conspicuous for number, magnitude, and historical interest. If contiguity and facility of access by sea have been instrumental in promoting civilization, by means of commerce and the interchange of habits and ideas, it is undeniable that the facilities of communication afforded by great rivers have exercised an equally important influence on internal improvements, and the development of national prosperity. The unusual advantages resulting to Asiatic races from a peculiarity in the water-courses, designated by the term double system of rivers, have been much insisted on by some geographical writers. In Asia, the geographical fact of double rivers is more frequent than elsewhere. The contiguity of great cities erected along 2 navigable rivers, enclosing, as it were, an area of country, would certainly produce an important effect on civilization. But this result has equally taken place without the double rivers, while on the Amazon and its affluents, the Volga and Don, or even the Indus and Sutlej, we see no such specially marked social results. The Arabian peninsula and the desert of Gobi are riverless. The cause of this is to be found in the absence of rain. The desert of Gobi is in the region of south-westerly winds which traverse a long stretch of continent, and arrive at this point perfectly deprived of moisture. The mountain chains which surround the desert discharge their melting snows on their outer declivities. Arabia is situated between the heated regions of Africa and the Asian continent. The southern part only derives some advantage from the north-eastern monsoon, and this accounts for the fertility it enjoys. The terms riverless and rainless are comparative terms. It is not to be implied that there is not a water-course, nor that a shower is a miracle. Asia may be divided into 6 principal drainage areas. Their general outlines are nearly coterminous with the great surface divisions we have been describing. They are the Altaian or Siberian water-shed, the Mantchoorian, the Chinese, the Indian or Himalayan, the Armenian or basin of the Euphrates, and the great area of inland drainage, including the basins of the various inland lakes. If we except the Chinese rivers which run a mean E. and W. course, all the other important rivers of Asia that reach the coast run N. and S. The 40th parallel of latitude, which is the mean E. and W. line of the great central plateau, seems to be the dividing line of the fluvial currents. The rivers in the area of inland drainage run in every direction, their courses being determined by the local accident of the surface. The rivers running north are those of the Siberian district; the Lena, the Yenisei, the Obi, and its great affluent the

Irtish. Their course is determined by the declivity of the northern side of the Altai system. The Lena is upward of 2,000 miles in length, and drains a basin of 800,000 square miles. The Yenisei is upward of 2,500 miles in length, and drains a basin of 1,000,000 square miles. The Obi exceeds 2,000 miles, and in its windings drains, with the Irtish and other tributaries, a basin of 1,350,000 square miles. Another river, the Olenek, is upward of 800 miles in length. These rivers abound in fish. We have already stated that the ice of the Arctic circle impedes their flow, and, of course, their navigation. The tributaries of these great rivers are navigable to a considerable extent, for, although they have a mean northerly course, they wind far to the east and west. In the north-east we find the great river Amoor, which drains the greater part of Mantchooria and part of Mongolia. Its basin is triangular, and is included between the south side of the Aldan and the mountains of Kin Yan and Chang-pe Shang. It runs about 1,600 miles, and drains an area of 800,000 miles. The Hoang Ho, 2,000 miles long, and the Yang-tse-Kiang, or Kiang Khu, upward of 2,500 miles long, rise on the north and south declivities of the Kuen Lun chain. This and the Peling separates them in their whole course until near the termination of their great courses, when they again approach each other. They describe an immense circuit, and are united to the east of the mountain range by a system of canalization. The Hoang Ho traverses the plains of China, and, like the Mississippi, brings down an amazing quantity of sedimentary matter, which gives its name to the Yellow sea; their drainage area amounts to 1,400,000 miles. The Canton river, or Hoang Kiang, rising in the province of Yunnan, empties into the bay of Canton. The easterly course of these rivers is determined by the slopes of the mountains which separate the Thibetian plateau from the lowlands of China, and which gradually decline toward the Pacific in a succession of terraces.—We now come to the rivers flowing south, including the river systems of Indo-China, of eastern and western Hindostan, and, further to the west, the Tigris and Euphrates. Among them are 6 rivers of the first magnitude. All, except the Tigris and Euphrates, flow from the Himalaya and its off-sets; and 8, the Bramapootra, the Indus, and Sutlej, present the singular feature of rising on the northern declivity, and breaking through the chain to find their basin and outfall on the southern side. The rivers of Indo-China are the Irrawaddy, the Menam, and the Cambodia, together with some smaller rivers. They take their rise in the Thibetian plateau to the north of the Himalaya chain, and, passing to the east of the true Himalayas, they traverse the Burman empire and Siam down the valleys formed by the mountain chains of Indo-China, and find their way to the sea in the bay of Bengal and gulf of Siam. The Ganges and Bramapootra form a double system. They rise at opposite

sides of the Himalaya, which separates their basins; they afterward converge, and finally fall into the sea within 40 miles of each other at the upper end of the bay of Bengal. The Ganges takes its rise from the southern declivity of the Himalaya, 18,000 feet above the sea, about 200 miles N. W. of Delhi. It issues a full-grown stream 120 feet wide from a perpendicular wall of ice. The sacred river has a great number of tributaries, all taking their rise from the southern slope of the Himalaya, the holiest of which, the Jumna, joins it at Allahabad. The Ganges flows into the bay of Bengal, which it enters by numerous mouths, forming, during the last 200 miles of its course, an extensive delta. The Bramapootra, "the offspring of Brama," does not receive this name until it has run an extensive course under the names of the Sanpoo and the Lohit; it rises near the sources of the Indus and Sutlej, on the northern declivity of the Himalaya, in lat. 80° N. long. 82° E. The Sanpoo flows E. through Thibet as far as the meridian of 90° , when it turns to the south and forces a passage through the mountain chain into Assam; there it takes its grander name, and makes a long course almost due south through Assam and Bengal. It flows into the bay of Bengal; some of its mouths communicate with those of the Ganges, but the 2 rivers preserve independent channels. The drainage area of the Ganges and Bramapootra amounts to 650,000 square miles. The other great river of south-eastern India is the Indus, which has its origin on the northern declivity of the Himalaya, not far from the sacred lake of Manasarowar. It takes a W. N. W. course, runs through the valley of little Thibet, and, intersecting the great Himalaya chain in about 35° N. lat. and 74° E. long. west of the valley of Cashmere, it descends S. W. to the plains of the Punjab. The Sutlej, the chief tributary of the Indus from the E., also springs from the sacred lakes, and flows westward along the valley. At about 75° E. long. it also breaks through the Himalaya mountains, and descends S. W. into the plains of the Punjab. From Mittun the Indus flows on southerly, and empties itself into the Arabian sea by several mouths. Its length is 1,650 miles, and it drains an area of 400,000 square miles. The Indus and the valley of the Punjab possess the highest historical interest, and the ford in the neighborhood of Attock has been the great crossing place of all the conquerors, proceeding from the highlands of Persia or eastern Asia, into the rich territory of India. The Euphrates rises in two sources, one in the interior of Armenia, not far from Mount Ararat, the other in the mountains of Erzurum, on the table-lands. The river describes a circuitous course to the west, and then descends in rapids through the Tauris mountains south-easterly across the plains of Mesopotamia. The Tigris has its principal source in the mountains of Armenia, west of Lake Van. Its first course is rapid, particularly after it receives the waters

of the Zab, but on the plains its current is slow. Near the city of Bagdad, the Tigris and Euphrates approach to within 12 miles of each other, and from this point they run nearly parallel for more than 100 miles. They unite above Bassorah, and form one stream, the Shat-el-Arab, which flows into the Persian gulf. They drain a basin of nearly 800,000 square miles. The names of these great rivers bring all the flood of historical recollection full upon the mind. The Euphrates is mentioned among the rivers of Paradise, the first seat of mankind. It is "the waters of Babylon," "the great river." Some of the mightiest cities of antiquity were on its banks. Its waters gave fertility to the lands it traversed, which supported an immense population. In central Asia, the region of inland drainage, there are several rivers of considerable size. These drain into the numerous lakes of the interior. The Helmund rises in the Hindoo Koosh, flows N. W. into the lake of Hamoon, after a course of 650 miles. The Jehoon or Oxus (another of the scriptural rivers) flows through Bokhara and the Sihon or Jaxartes, traverses the N. E. part of independent Tartary. They discharge into Lake Aral. The area of inland drainage contains a number of smaller rivers which are mere collecting channels for the waters that fill the several lakes, both salt and fresh, of central Asia; the most important of these is the Kashgar or Yarkand, which empties into the lake of Lop Nor.—The internal water surface of Asia is small when compared with the coast area of the land. There are, however, several lakes, of which the Caspian sea, the lakes Aral and Baikal, are the principal. Although not comparable either in extent or importance with the great fresh water lakes of the North American continent, these inland reservoirs are of great size, and possess much peculiar geographical interest, from the great number of salt lakes as well as from their low level. The Caspian sea is the largest salt lake in the world. Its level is much below that of the ocean, and according to a recent Russian survey, upward of 800 feet below that of the Black sea. It receives the waters of the Volga, the Ural, and several minor streams. Its inland width is about 200 miles, and length from N. to S. 760 miles. Bordered on the N. by Russian territories and on the S. by Persia, its situation as a means of rapid communication on the frontier is of the first importance in the affairs of central Asia. The lake Aral is east of the Caspian, from which it is separated by the desert of Khiva. It is about 60 feet above the ocean level. Its waters are saline, but not so impregnated with salt as those of the Caspian. It receives the water of the Jehoon and Sihon, the ancient Oxus and Jaxartes. It is about 300 miles long and 150 miles wide. Great diminution in the depth both of the Caspian and Aral has taken place in modern and even in recent times. Tradition connects the two seas at some former period, and the presence of extensive depressions between them, with surface

layers of salt, favors the belief. Between the lake Aral and Lake Baikal, the depressions of the surface are shown in a chain of lakes and water courses, the Balkash, or Zengri, Zanson, Khaseebach, and Onbzhahor, all on the south of the Altai and the edge of the eastern plateau. Toward the centre are the Lop Nor and Koko Nor. The lake Baikal is a fresh-water lake, in the Altai mountains, and is the largest body of water at the same altitude on the globe. It is 1,535 feet above the level of the sea. It receives the waters of a great number of rivers, of which the Selenga is the chief, and its only outlet is the river Angara, which does not discharge a tenth of its waters, and falls into the Yenisei. It has an area of 15,000 square miles. Near its southern end is the Russian trading settlement of Kiakhta on the frontier between Siberia and Mongolia. In the Himalaya are situated the lakes of Manasarowar and Bakas Tal, not remarkable for their size, but interesting for the religious veneration in which they are held for the reason that the sources of all the great rivers of the Hindoos are in their vicinity. These lakes are 15,000 feet above the level of the sea. The lakes of western Asia are the lake Asphaltites or the Dead sea, and the sea of Tiberias. Independently of the historical interest that attaches itself to the Dead sea, it is of interest to the geographer and naturalist, lying at a level of 1,312 feet below that of the Mediterranean and surrounded on all sides by sandy deserts and volcanic hills. The sea of Tiberias, though only 60 miles distant, is nearly 1,000 feet higher, and encompassed by agreeable scenery. The salt lakes of Van and Ooroomesyah in Armenia are divided by the frontier line of Turkey and Persia. —The climate of Asia embraces every general variety and every local incident: the rainless and riverless plains of Gobi, and the superabundant moisture of the Indian sea-coast, the extremes of heat and cold in Siberia and the steppes, the more equable and agreeable climate of Asia Minor, gradations of temperature indicated both by a latitude ranging from the equator to the pole, and by a vertical range from several hundred feet below the level to 25,000 feet above it. In no part of the earth's surface are the modifications of temperature, and consequently of products, more strongly marked; while in some particular spots the inhabitants behold at one view in their valleys and hill-sides the animal and vegetable life of the tropics, of the temperate, and of the frigid zones. The same principal divisions which classify the watersheds will nearly serve for a general description of climate. The great plains of Siberia are exposed to the extremes of heat and winter cold. The town of Yakootsk, lat. 62° 1' N. and long. 129° 44' E., has a mean annual temperature of 18° 48', and is consequently the coldest town in the world. But even this extreme is more endurable than that of Tobolsk, in which the thermometer sometimes remains for weeks at 86° F. in summer, while the mean winter temperature is zero. The general

cause of this excessive disproportion is to be found in the distance of the plains from the ocean, whereby the intermediate veil of mist and cloud which in more equable climates tempers the intensity of the sun's summer rays, is wanting in Siberia. In winter the same cause produces a contrary effect. No friendly breeze charged with moisture reaches these plains to mitigate the severity of an arctic cold. The south-western winds are prevalent. These, which in Europe are warm, reach Siberia after having traversed wide expanses of land covered with ice and snow, and become cold land winds. Beside this, the marshes in the north hold the ice for a long period, and contribute to depress the temperature. The same remarks apply to the steppe district north of the Caspian and Aral, though the climate is less intolerable, and indeed to the whole of Asia north of lat. 35°. The mean annual temperature of Pekin, lat. 39° 54' is 52° 8' F., or 9° lower than that of Naples, which is rather more northerly. The mean winter temperature of Pekin is 4° 5' lower than that of Copenhagen, which is 17° further north. The steppes are a treeless district for hundreds of miles. In spring and autumn they are covered with a luxuriant herbage of tall grasses, like the American prairies, which in summer is dried up. In Siberia extensive forests of pine and other northern trees are found in some parts within the arctic circle, while in the valleys of the Altai and other sheltered places, the cereals are cultivated. The immense rainless salt desert of Gobi, whose surface is far lower than that of Thibet, and far above that of Siberia, is exposed to variations of climate so extreme that there are no vegetable productions, except the very hardiest desert shrubs. The western plateau partakes of the excessive cold in winter and heat in summer, which mark the steppe district, but if we except the salt desert of Khorassan, the surface, though generally deficient in water even in the fertile parts, is agreeably diversified, and in parts its productiveness richly rewards the cultivator. In northern India we find the great varieties of climate consequent upon vertical irregularities of the surface. In Afghanistan we find summer in the valley, spring on the hill-side, and winter on the top, and even where we have not the panorama of the year thus spread out before the eye, the same result is attained, only on a more extended scale in contiguous districts. The sultry and oppressive plains of Sind give to the natural loveliness of Caashmere all the added force of contrast. In southern India and in the valleys of Burmah, Siam, and Pegu, we have the region of the monsoons, those regular winds which prevail alternately from south-west to north-east in the Indian ocean. The enervating influences of this climate are mitigated by the cool breezes from the mountain ranges. In the prolific vegetation, the magnificent specimens and the gorgeous array of the forest and jungle, we see the result of warmth and moisture, the two conditions most favorable to vegetable

generation and development. In approaching the equator the line of perpetual snow commences at a gradually increasing altitude. The Himalaya chain presents the singularity of a difference in the snow line on the northern and southern declivity. On the southern declivity, lat. $80^{\circ} 45'$ to 81° N., the snow line of the Himalaya is at 12,982 feet above the level of the sea, about equal to that in the same latitude in other quarters of the globe. But on the northern declivity, owing to the influence of the currents of air coming from the Thibetian plateau, the snow line does not commence until the height of 16,680 feet. This fact, which was announced by Von Humboldt, and disputed, has been established beyond doubt. In Von Humboldt's great work on central Asia, the subject of climatology is presented to the reader in the following general summary: "The continent of Asia extends from east to west, over a breadth of longitude 3 times as great as that of Europe. Between the mouths of the Yenisei and the Lena, it attains the 75th degree of latitude. Everywhere its northern coasts reach the limits of perpetual winter; the summer limit of the polar circle is only at a few points beyond the coast line. In the open plains of the meridian of Baikal, no friendly mountain chain breaks the force of the polar winds until the 52° parallel, while in the plains west of the meridian of the Bolor-Tagh the unbroken expanse reaches to the still lower latitude of 88 or 86 . The north wind sweeps over a snow-covered surface which stretches away to the pole and includes the region of the maximum of cold. Continental Asia presents a comparatively limited surface to the solar influence of the torrid zone. Between the meridians which bound the eastern and western limits, those of Cape Tchoukotkoi and the Ural, in the enormous range of 121° of longitude, the equator passes over the ocean. With the exception of a small part of the islands of Sumatra, Borneo, Celebes, and Gilolo, there is no land in all this breadth under the equator. The continental portion of Asia in the temperate zone enjoys but little of the rising strata of warm air which the vicinity of Africa makes so beneficial to Europe. Other causes of coolness in Asia are its configuration in a horizontal sense, the form of its contours, the inequalities of its surface in a vertical direction, and its easterly position in relation to Europe. Asia comprises an upheaving of the continent in continuous masses, without depression or important peninsular extensions north of the 30th parallel. Lofty mountain systems running east and west, whose highest chains seem to confine those of the tropics to the nearest lying vicinities, oppose themselves in a long line to the passage of the southern winds. Very lofty plateaus which, with the exception of western Persia and Thibet, are less connected with each other than they are generally considered to be, lie scattered from the mountain knots of Cashmere and Ladakh as far as the sources of the Orkhon, in a gene-

ral S. W. and N. E. direction. They traverse or enclose valleys, uplift and maintain masses of snow until far in the summer, and by the currents which they send down exercise an influence on surrounding regions, and depress their temperature. These uplands change and individualize the climate east of the sources of the Oxus to the Alatan and Tarbagatai far in the interior of central Asia between the parallel chains of the Himalaya and the Altai. Finally, Asia is separated by the whole width of Europe from the seas west of the westerly coast, which, in the temperate zone, are usually warmer than the eastern shores of a continent (unless cool ocean currents depress the mean temperature). The breadth of the European continent from the meridian of the back-ground of the Finnish lowland, contributes to the cooling down of the prevalent westerly winds, which become land winds to that part of the old world lying east of the slightly elevated mountain wall of the Ural."—The line of the limit of trees in Siberia is determined by the convexity of the coast-line, from which it preserves a tolerably even range, the most northerly point is about 70° north, at which point the usual Alpine vegetation of mosses and saxifrages commences. This is a region of marshes. From this point south, the Alpine pine, the fir, larch, and birch, are found in extensive forests. The long frosts, and the dry, cold winds, render Siberia unfavorable to the production even of the hardier kind of cereals at a latitude considerably lower than that of similar productions in Europe. In the south of Siberia the land is broken up into valleys and sheltered spots by the northern spurs of the great and little Altai, and here the successful cultivation of wheat and garden produce commences. The oak first appears at about the parallel 50° , near the northern end of the lake Baikal. The vast riverless and arid district of the upper plateau is an unbroken expanse of stony and sandy desert, unrelieved by tree or vegetation, if we except some few thorny cactuses and similar plants, although even to these the cold winters are unfavorable. Some few plants, which have been transferred to this inhospitable region, have reappeared, but in such stunted and altered shape that their character is lost. The asafetida grows on the southern region of this plateau near the Himalaya. In some of the sheltered places on the mountain-sides species of forest trees are met with, but under a much altered character. Westward toward the lower plateau, on little Thibet and in Thibet itself on the sides of the Himalaya, there are spots which favor cultivation, and somewhat approximate in the character of their flora to the more temperate region south of the dividing ranges. Lassa is celebrated by the Chinese for its vineyards. These perhaps are in sheltered valleys, Lassa itself being 9,000 feet high. Of the steppes we have already spoken in connection with the climate and the pastoral pursuits of their inhabitants.

The plateau of Iran is divided into 2 botanical regions. There are large tracts of fertile country, in which all the cereals flourish luxuriantly, together with the fruits and flowers which usually characterize the wild belts of the temperate zone. The drawback of these countries is the dryness of the atmosphere, for which the ancients found an antidote in irrigation. The Cyclopean remains of their works for this purpose in the plains of Mesopotamia and eastern Syria attest their industry, and history tells us of the rich reward which they harvested. In the present day the provinces of Irak Arabee, the hilly provinces of northern and western Persia, and the watered slopes of the mountains, yield vegetable productions of the first quality and of rare beauty. The climate closely resembles that of Spain. The tobacco of Sheeraz is unrivalled for its delicate fragrance throughout all the East, and wheat, maize, oranges, pomegranates, grow in perfection. The other region included in this plateau is desert, not truly the desert of central Asia, destitute of all vegetation, but only producing those types which tolerate an exceedingly arid soil and atmosphere. South of the Hindoo Koosh the climatic influences present the same general characteristics, but the fertility is increased by the presence of greater moisture. The vale of Cashmere in lat. $34^{\circ} 7'$, at an altitude of 5,818, possesses a climate which passes among orientals for the perfection of earthly loveliness, yet in this valley from December to March snow is found several feet in depth. The productions of Cashmere include every variety that does not require the uniform heat of the tropics. The choicest fruits and trees of Europe are here indigenous. The floating gardens of Cashmere, supported by the thick growth of aquatic plants, are objects of curious interest. The great plains of northern India are the balance to this luxuriant and bounteous nature, and the burnt-up plains of Sindh and Beloochistan partake of the desert character before mentioned. The great Himalayan chain presents distinct zones of vegetable productions, with this remarkable circumstance, that on the Thibetian side (where, notwithstanding the great cold, the absence of moisture causes, as we have seen, an elevation of the snow line) the zone of vegetation rises much higher than on the southern side. Von Humboldt tells us that "the character of Himalayan vegetation is expressed by 8 species of pine, 28 oaks, 4 birches, 2 kinds of scutellaria (the wild chestnut tree of Cashmere, which grows to a height of 100 feet), 7 maples, 12 willows, 14 roses, 3 species of strawberry, 7 rhododendrons, one 20 feet high, and many other northern forms. Among the *conifers* the *pinus deodara* (the timber of the gods) is nearly allied to *pinus cedrus*. Near the limit of perpetual snow are found the large and showy flowers of the gentian plant, swertia, parnassias, peony, and tulip, with others more peculiar to the Indian Alps." The tropical vegetation at the foot of the hills is found at a considerable

elevation, where sheltered valleys favor their growth. Wheat is cut at the altitude of 10,000 feet, capsicums, turmeric, and ginger at 4,000 feet. The true Indian region includes in its productions all the tropical plants and trees which dense forest, impervious to the rays of the sun, and bathed in continual moisture, will produce, while on the ascending highlands we meet with the productions of more temperate climates. The sapan, the teak, the bamboo, grasses which grow to canes, and reeds that shoot up into the dimension of trees, are found in the swamp and jungle. In the open grounds the palm and cocoanut, the banyan tree, mangoes, plantains, bananas, guavas, the hazel nut, indigo, maize, cotton, hemp, sesamum, and a countless profusion of the most gorgeously colored flowers, make up the general idea of the Indian flora. The Chinese flora, with other peculiarities, possesses the tea-plant, whose successful cultivation is confined at present to the region on the eastern lowland, between the 80th and 88d parallel of north latitude. Attempts have been made to introduce it into that part of the Indian region which most resembles its native habitat; but although it has been successful in Assam, as a matter of scientific enterprise, it can hardly be said to have succeeded as yet in a commercial point of view.—Asia is probably the original habitat of all the domestic animals which have become so indispensably useful to mankind: the horse, the ox, the sheep, the dog, the camel. Few of these species are now to be met, even in Asia, in a really wild state. The Arabian and Syrian deserts, and the plains of Mesopotamia, have been renowned from the earliest ages for their incomparable horses. Of oxen, there are 4 distinct species: the Indian ox (*Bos Indicus*), remarkable for his haunch, and held sacred by the Hindoos; the yak (*Bos grunniens*), of central Asia, with silky tail, used for military standards and fly-flaps; the buffalo (*Bos bubalus*), a huge unwieldy and ferocious brute in his wild state, but docile, though somewhat stupid, when domesticated; the gayal (*Bos gaurus*), of Indo-China. Among goats the Cashmere variety is world-famous for the silky hair, of which the rare shawls are made. Of sheep, the fat-tailed Persian breed is remarkable. Dogs of all kinds and varieties abound in Asia. The pariah dog of Hindostan does the duty of a public scavenger, and another breed does the same duty at Mecca. The Persian greyhound, and the great mastiff of Thibet, are the noblest of the canine species. Among the carnivora, the Bengal tiger is the most terrible, and a singular circumstance is narrated of this animal, that during summer he ranges in the plains beyond the Himalaya. The elephant and the rhinoceros are great among pachydermata. The musk deer is a remarkable ruminant confined to Asia. Out of all the known species of animals, 422 are stated to belong to Asia, and of these 288 are peculiar to that continent.—The islands of Asia include the Kooriles,

the Japanese islands, the Loo Choo, Formosa, the Philippines, Ceylon, the great islands of the equatorial region, Java and Sumatra, Borneo, Celebes, the Moluccas, and numerous minor groups, which will be treated under their respective titles. The islands of the equatorial region are distinguished by the same general characteristics of climate and natural productions. One point, in reference to the human variety by which they are inhabited, is worthy of notice. The western equatorial islands, contiguous to the continent, are principally inhabited by the Malay type. In the great island of Papua, though not at an extraordinary distance from the other, we find a new variety, the Papuan, which has gradually extended itself over the great Australian continent and Australasian islands. This variety is by some writers erroneously likened to the negro race; but the difference is marked both in the cranium and facial outline, and in peculiarities of the body and lower limbs. There is more affinity with the Malay than the negro. To the cotton plant and the sugar cane are added those plants, the development of whose aromatic property requires long-continued dry heat. Cinnamon, pepper, ginger, nutmeg, together with the cocoa palm, the bread-fruit, sago, papaw, and banana, now appear in all the vigor and luxuriance of their native soil and atmosphere. The carnivorous animals decrease in number and ferocity, their place being supplied by the quadrupeds and the reptiles, whose venomous powers are in the highest degree of concentration. In Papua the phalangers appear in strong numbers, the marsupials become a more important class, and the bird of paradise is a magnificent addition to the feathered tribes.—The mineral wealth of Asia consists of gold, silver, and copper, found in various parts of the continent, the Ural and Altai being particularly rich in mineral deposits. Iron is found in all the hill regions beyond the limits of the great central plateau. Coal is found in China, in Turkey, and Japan. In India, veins of coal have been profitably worked for many years. Mercury is found in China, Thibet, Japan, India, and Ceylon; lead in China, in the Altai, Siam, Japan, Persia, Arabia, and the Taurus. Of precious stones, the diamond is found in India and Siberia; rock crystals and amethysts in the Altai, Himalaya, and Ural; the jade stone, in Toorkistan; the beryl in the Baikal range of the Altai; lapis-lazuli on the banks of the Oxus.—The kaolin clay of Japan and China enables those nations to reach their unattainable perfection in porcelain manufacture. The petroleum of the Caspian, the asphaltum of the Dead sea, the bitumen of the Euphrates, are remarkable productions. Rock salt is found in the Ural, and the Altai, while common salt is found on the surface throughout Asia. The organic remains of northern Siberia are peculiarly worthy of notice, possessing an interest far beyond the ordinary fossils of the geologist. Animals of extinct species have been found im-

bedded in ice, and preserved by natural process, in all the perfection of their original form.—If we turn to the pages of history, we recognize in this division of the world the probable birthplace of mankind, as determined independently of revelation. From Asia originated also the great religious movements of mankind; Pantheism and Buddhism; the Monotheism of the Jew, with its obligation to extirpate idolatry; the pure and benevolent faith of the Christian; the divine unity of Mohammed, with his injunction of compulsory acknowledgment that there is but one God and that Mohammed is his prophet. Northern and central Asia is the great parent hive from which swarms have issued to root up the ancient landmarks and overthrow kingdoms. Alaric, Attila, Genghis Khan, Tamerlane, are familiar names, but how many have escaped the notice of history! Far off in eastern Asia the torrent of migrating nations had been set in motion centuries before our era. The earliest known is "the attack of the Hiungnu (a Turkish tribe), on the fair-haired and blue-eyed perhaps Indo-Germanic population of the Usun, dwelling adjacent to the Yueti Getæ in the upper valley of Hoang Ho in north-western China. This desolating torrent proceeding from the great wall erected against the Hiungnu (214 B. C.) to the most western parts of Europe, moved through central Asia north of the chain of the Himalaya." Asia was the seat of the Assyrian, Babylonian, Persian, and Macedonian empires, the mightiest of antiquity except the Roman. The great cities of Babylon, Nineveh, Susa, Ecbatana, Persepolis, Ctesiphon, Seleucia, Palmyra, the cities of Asia Minor, Tyre and Sidon, with others equally memorable in history, keep before our minds the ancient glories of Asiatic power and dominion; while in after ages Bagdad, Bassorah, Damascus, Aleppo, and even the distant Samarcand and Balkh in the wilds of central Asia, bespeak the progress of civilization and intelligence. What does not mankind owe to Indian sages and Chinese philosophers? From them the ancients drew their inspiration. The priests of On, or Heliopolis, and of Thebes, borrowed the secrets of nature from India. Pythagoras and the Greeks acknowledged the source from whence their knowledge sprang. The Macedonians, victorious in arms, could not emulate the wisdom and knowledge of the Bramins. From Asia proceeded all the science, all the philosophy of antiquity, whether drawn from the long catalogue of facts recorded by the sages of Chaldea, whose chronology at Babylon, as known to Aristotle, extended back to 2400 B. C., or drawn from the lore of India and China. "In the early twilight of history we perceive several shining points already established as centres of civilization, radiating simultaneously toward each other." The investigations of the learned Lepsius have discovered drawings and inscriptions in the Egyptian tombs which take back the epoch of a consolidated civilization in Egypt to 3400 B. C. In the days of Abraham a kingdom in

all its political proportions is authenticated. There is every probability that this civilization was drawn from the fountain head of intelligence in northern India or China. The regular chronology of the Chinese goes back to 2700 B. C., or 1600 years before the siege of Troy. Many literary monuments of the 18th century, B. C., remain, and in the 12th, Tscheuli records the measurement of the length of the solstitial shadow, which was so exact that Laplace found it accordant with the theory of the alteration in the obliquity of the ecliptic. In the present state of knowledge as to Indian records and antiquities, the history cannot be established satisfactorily anterior to 1200 B. C., but some of the Sanscrit writers have traced out a period of 4000 years B. C. The great era of modern oriental history dates from the establishment of Mohammedanism and the downfall of the Roman and Persian empires. A second epoch may be said to commence with the discovery of the passage by the Cape of Good Hope, but this is properly only the inauguration of new commercial relations between the southern peninsula of India and the European powers. The rise of the East India company and the establishment of the British empire in India, form the epoch from which, in all probability, future historians will date the changes in southern Asia. The introduction and propagation by Mohammed of a new form of religious belief, set the primitive, vigorous, and highly imaginative inhabitants of the Arabian peninsula in movement. Passing over the various dynasties of the caliphate, we come to about A. D. 1000, when Sultan Mahmoud, a Khorasan chief, having subdued Afghanistan and the eastern part of Persia, made Ghuznee his capital, and swore that he would make an annual campaign into India for the establishment of Mohammedanism and the extirpation of idolatry. For 10 successive years he crossed the Indus, carried his conquering arms into the great peninsula, penetrated as far as Delhi; but though always successful in his forays, he achieved no permanent settlement. His successors filled the throne of Afghanistan until 1159, when Mohammed Goree, a native chieftain, expelled the dynasty of Mahmoud, succeeded to the throne of Persia, and carried the tide of conquest as far as the Ganges. In the west the energy of Mohammedanism was displayed in the vigorous resistance of the sultans of Egypt, Damascus, and Trebizond, to the forces of the crusaders, and the active harassing warfare which they maintained after the capture of Jerusalem by Godfrey of Bouillon, and the western princes (July 15, 1099), and by which they finally expelled the Christians from the Holy Land.—We approach a period from which the modern relations of Europe with central Asia, India, and China, may be said to have taken their first commencement. In 1226 another of the mighty migratory movements of nations took place. A vast human flood, under Genghis Khan, surged in from the plains of

oriental Asia, and like the bursting of some upland lake spread its overwhelming waves in a constantly increasing circuit until further progress was stayed by exhaustion. This extraordinary movement overwhelmed China, India, western Asia, and the conquering tide rolled on as far as the centre of Europe. The sanguinary battle of Liegnitz, in which Duke Henry of Silesia fell with the flower of Teuton chivalry, seems to have stayed the course of this terrible scourge. The Mongols, on the announcement of the death of Genghis, retired, but their yoke remained firmly fixed on Russia, where the Golden Horde held sway for more than 200 years. In Bagdad they terminated the dynasty of the Abbassides and the office of the Omra al Omrah. The caliph Mustanser made a vigorous resistance. His son and successor, Mostassem, led an immense army against the invaders, but he fell with 200,000 of his best troops, and the conqueror, Hulaku, took his seat on the throne of the caliphs. At the same epoch the Mongols established the succession of Genghis Khan on the throne occupied by the descendants of Mohammed Goree, thereby founding the Mongol power in India. (The successors of Genghis were subsequently displaced by Tamerlane's descendants.) The great body of the Mongols themselves embraced Buddhism, but at what period is uncertain, but probably after the death of Genghis. The Mongols of India adopted the dominant religion of northern India, in which Mohammedanism had, as we have seen, been introduced by Sultan Mahmoud of Ghuznee. By the same irruptive movement, the native dynasty of the Chinese was displaced, and a Mongol line of sovereigns set up in their stead, of whom Kublai Khan was the first and ablest. The conquerors made no attempt beyond grasping the supreme rule. The immense numerical superiority of the natives compelled the invaders to adopt their manners, customs, and language, while the Chinese, accustomed to a despotism, and indifferent to a change of masters, remained for a while content. Hitherto Asia had been known to Europeans only through the information obtained at second hand by the Venetian and Genoese traders with the Levant and Egypt. The productions of India and the far East found their way to Europe by the Red sea and Egypt, or by the Persian gulf, connected with the overland caravan routes between Aleppo, or Damascus, and Bagdad. An internal caravan route had been established, it is impossible to say how early, between Asia Minor, the valley of the Euphrates, and the ancient cities of Persia and Media. The Greeks of the Macedonian empire carried on a caravan trade between the cities of Babylonia and Persia, and north-western India. But among the fierce tribes of Hyrcania, Aryana, Gedrosia, and the other districts of Persia, it is not probable that there was much commercial intercourse.—In the middle ages, after the establishment of the Mohammedan empire, the long-established regular lines of communication be-

tween the Mediterranean and principal cities of Persia, and, by means of the Euphrates and Tigris, through Bassorah to the Persian gulf, and thence to the ocean, were soon adopted. From these cities not only was an inland commerce carried on among themselves, but from Teheran, by way of Nishapoor, Herat, and Cabool, the road was open into northern India, and by way of Bokhara, Samarcand, Cashgar, and Yarkand, the road was opened to the Thibetian plateau, and to the northern declivities of the Himalaya. The conquests of the Mongols of the Tartarian steppes, and southern Russia, were also the means of creating an intercourse in that direction. The conquests of the savage tribes, which in the course of 26 years had penetrated from the Chinese wall to Cracow, in central Europe, and to the shores of the Mediterranean in western Asia, induced a feeling of terror in Christendom. The monks, John di Plano Carpini, and Nicolas Ascelin, were sent to Batu Khan, at Karakorum, and in 1248, Rubruguis, or Ruysbroek, a Brabanter, was sent to Mangu Khan, the successor of the great Genghis. These men were sent as missionaries, from some vague hope of establishing friendly relations with the Mongolians, and even of inducing them to coöperate with the western powers in the conquest of the Mohammedans. Rubruguis has left some interesting accounts of the Mongols, and of their capital. In fact, he may be said to be the first European who has, from personal knowledge, given any account whatever of the great countries which the ancients distinguished by the vague name of Scythia, and of which very little has been gleaned from the works of the Arabian geographers. He recognized the identity of the Huns, Bashkirs, and the Hungarians, with the Fin, or Uralian type. He found Gothic tribes still preserving their language in the fastnesses of the Crimea. Twenty-five years after Rubruguis, the celebrated traveller, Marco Polo, also travelled in central Asia and Mongolia. He resided for a period at the court of Kublai Khan, the conqueror of China, by whom he was held in great estimation. He was employed by that sovereign in various ways, and was governor of the province of Kiang Nan. Marco Polo has earned the reputation of the Herodotus of the middle ages, and from him we have an admirable account of central Asia, China, and India, the correctness of which, though once doubted, has been amply confirmed by modern travellers. Great part is derived from his own personal recollections, the rest from compilation and information, in which it is thought by orientalists that he borrows from the Chinese writers, especially the travels of Hsuan Tsang, a Buddhist pilgrim of the 7th century. The communications opened with central Asia by the spread of the Mongol empire from Moscow to the eastern shores of Asia, and the information brought to Europe by Rubruguis and Marco Polo, served to increase the yearnings for participation in the fabulous wealth of the East. These led to

the discovery of the Cape of Good Hope by Bernardo Diaz, and the sea passage to India by Vasco da Gama in the 15th century.—Before that epoch, however, some not unimportant political changes had taken place in western Asia. The vast Mongolian empire of Genghis had, after a few generations, crumbled away. The tribes from whom the guards of the throne and person of the caliphs had been chosen, driven from their native plains by the Mongols, had assumed the position of independent conquerors, and had founded the Ottoman empire. In 1299 Othman led his followers into the ancient province of Bithynia, nearly opposite Byzantium, and made Broussa his capital. The able and energetic Amurath, and his terrible son Bajazet, soon overran the provinces of Asia Minor, and crossing into Europe, possessed themselves of the Byzantine provinces. But a new invasion of the Mongols, no less fearful in its accompaniments than the former, now swept over Asia. Tamerlane had conceived the idea of restoring the empire of Genghis. Setting his hordes in motion, he passed like an avenging whirlwind from the wall of China to the shores of the Mediterranean, smiting down and crushing every nation and dynasty which opposed his progress. For a short period the Mongol and Ottoman stood face to face. But two such neighbors could not long remain quiescent. Their vast forces met on the plains of Angora (A. D. 1402), to contend for the empire of the world. The forces of Bajazet are said to have numbered 500,000 fighting men, while Tamerlane's masses were still more numerous. Bajazet suffered a most complete overthrow, and was himself taken prisoner. But the Ottoman power, though shaken, was not broken. The vigor of Amurath III. restored it, and in 1453, his successor, Mohammed II., rode through the breach into Constantinople, after one of the most terrible sieges and valiant defences recorded in history. Under Solyman the Magnificent (A. D. 1520-'56), the Ottoman empire reached its present limits in Asia, comprising Asia Minor, Syria, the country as far as the Tigris, and Arabia. A quarter of a century after the permanent establishment of Mohammedanism in Constantinople, Bernardo Diaz doubled the Cape of Good Hope (A. D. 1486). Three years afterward, Vasco da Gama arrived at Calicut, on the coast of Malabar. Da Gama made an alliance with the rajah of Calicut, and on his return, Almeida and his successor, Albuquerque, were sent out and formed Portuguese settlements. The city of Goa, which had belonged to the rajah of the Deccan, was besieged and captured (A. D. 1510), and became the capital of the Portuguese empire in the East. At this period, so pregnant with political consequences to Asia, China was in the hands of a Chinese dynasty, which had been established in 1357 by the extirpation of the Tartar descendants of Kublai Khan. In central Asia the empire of Tamerlane had rapidly broken up. The thrones of Samarcand,

Ispahan, Afghanistan, and Khorassan, were filled by descendants of Genghis or Tamerlane. A number of petty chiefs maintained their independence; and the Uzbecks, the successors to the country and predatory habits of the Turka, harassed all the territories within their reach. At the same point of time in which Albuquerque was founding European dominion in India, Baber, the great grandson of Tamerlane, was meditating the restoration of his ancestral empire in northern India, and had already commenced that career of action and enterprise which resulted in the accomplishment of his great design. In Persia the first of the Sufi dynasty had just ascended the throne: the promoter of those religious differences of Soonees and Sheeahs which have proved the source of irreconcilable enmity between Turk and Persian. The Portuguese soon extended their relations with the inhabitants and princes of the Deccan, and Albuquerque directed a successful expedition against Malacca, where he received the submission of the keys of Pegu and Siam. He also seized Ormus at the mouth of the Persian gulf. In 1518, in consequence of his reports, an embassy was sent to China which was well received; and the Portuguese, having been fortunate enough to gain the favor of the court of Pekin by extirpating a band of pirates that infested the coast, permission was given them to settle in the country, and Macao was assigned as a residence. From this point and from Goa they directed their operations, and in 50 years were masters of the Spice islands, and monopolized the whole trade of the eastern ocean; the Moguls themselves purchasing from the Portuguese the productions which they brought from more distant parts. The subjugation of northern India by the emperor Baber in 1527, and a succession of able princes, Humaiyoun, Akbar, Jehangir, Shah Jehan, and Aurungzebe, consolidated the empire of the Moguls in India. Abbas the Great, the shah of Persia, was contemporary with Aurungzebe, and raised the Persian empire to its highest pitch of modern greatness, while the vigorous opposition which he maintained against the power of the Ottomans, compelled them to turn their attention to their eastern territories. Europe owed a respite from the sultan's conquering arms. During this reign a battle between the Persians and the Usbecks took place near Herat, in which the Usbeck power was broken and Khorassan relieved from their incursions.—The brilliant successes of the Portuguese in India inspired adventurers of other nations with hopes of wealth. But it was not until the year 1600 that the English East India company was formed, and in 1612 English factories were established by leave of the native authorities at Surat, Ahmedabad, Cambay, and Gogo. The jealousy of the English adventurers at the power of the Portuguese soon induced them to join with Shah Abbas in reducing the island of Ormus, which had been in possession of the Portuguese ever since its seizure by Albu-

querque, in 1507. Accordingly, in 1622, the Portuguese were driven out, and Ormus again passed into the power of the Persians. From this the English, however, derived no immediate advantage. In 1641 the native dynasty of the Chinese, which had held the throne of Pekin for nearly 8 centuries, was terminated by the rebellion of the mandarin Litching, and the Mantchoo Tartars again ruled the vast empire of China. In 1640 the settlement of Madras was founded by the East India company; in 1645 the factory which formed the foundation of Calcutta was established, and in 1664-'5, after a contest with the Portuguese, they succeeded in getting possession of the island of Bombay. The conclusion of the reign of Aurungzebe and the commencement of the 18th century was marked by the first appearance of the Mahratta powers, a confederation of Hindoo chiefs in India. At the same period the English East India company, which had been unsuccessful as a trading undertaking, was reorganized, and in 1708 a new body of adventurers was formed, and admitted to a participation in its rights and privileges. This body was destined before the lapse of a century to acquire and consolidate a larger and more powerful empire than had ever been governed by the Moguls in India. Other European trading companies beside the English and Portuguese had also obtained a footing in India. The Dutch, after their emancipation from the Spanish dominion, had applied all their energies to foreign commerce and to the formation of foreign settlements. In this they had been eminently successful. The French under the fostering care of Colbert sent out adventurers, and opened a direct trade with the Indies. All these European settlements entertained the deepest jealousy of each other, and self-defence, both from each other and from the native power, compelled them to keep up some degree of military force. The Portuguese indeed were under the dominion of a viceroy, who surrounded himself with all the pomp and state of a native prince. In 1715 a deputation went from the English company to the court of Delhi in reference to some concessions. It happened that the emperor Feroksheer, the great grandson of Aurungzebe, was seized with a severe illness. Dr. Hamilton, a physician to the company, cured the emperor of his malady, which had baffled the skill, or rather ignorance, of the court physician. In gratitude the emperor, at Dr. Hamilton's request, granted permission to the company to purchase 37 townships in Bengal, beside other valuable privileges which laid the foundation of Calcutta's future greatness. On the death of Aurungzebe in 1707, after a reign of 48 years, during which he had brought the whole peninsula under his power, the affairs of the empire had rapidly fallen into confusion. The Mahrattas attained great power. The various rajahs became virtually independent, acknowledging only a nominal allegiance to Delhi. The disorders which the firm hand of the

Mogul emperor had suppressed, reappeared, and the vast territory was torn to pieces by internal dissensions. The position of affairs in India in 1750 is thus described by an eloquent living writer: "A series of nominal sovereigns, sunk in indolence and debauchery, sauntered away life in secluded palaces, chewing bang, fondling concubines, and listening to buffoons. A series of ferocious invaders had descended through the western passes, to prey on the defenceless wealth of Hindostan. A Persian conqueror crossed the Indus, marched through the gates of Delhi, and bore away in triumph those treasures of which the magnificence had astounded Roe and Bernier; the peacock throne on which the richest jewels of Golconda had been disposed by the most skilful hands of Europe, and among others the inestimable 'mountain of light.' The Afghan soon followed to complete the work of devastation which the Persian had begun. The warlike tribes of Rajpoots threw off the Mussulman yoke. A band of mercenary soldiers occupied Rohilound. The Sikhs ruled on the Indus. The Jauts spread terror along the Jumnah. The high lands which border on the sea-coast of India poured forth a yet more formidable race—a race which was long the terror of every native power, and which yielded only after many desperate and doubtful struggles to the fortune and genius of England. It was under the reign of Aurungzebe that this wild class of plunderers first descended from the mountains; and soon after his death every corner of his wide empire learned to tremble at the mighty name of the Mahrattas. Many fertile viceroyalties were entirely subdued by them. Their dominions stretched across the peninsula from sea to sea. Their captains reigned at Poonah, at Gaurior, in Guzerat, in Berar, and in Tanjore. Nor did they, though they had become great sovereigns, therefore cease to be freebooters. They still retained the predatory habits of their forefathers. Every region that was not subject to their rule was wasted by their incursions." In 1746, war having broken out between England and France, Labourdonnaix, the French governor of the Mauritius, conducted an expedition against Madras, the chief British settlement in India, which capitulated on the understanding that it should be ransomed. Dupleix, governor of the French settlement of Pondicherry, had other views. He had conceived the ambitious scheme of consolidating the states of Hindostan into one mighty empire, of which he himself should be the prime head and governor. This scheme involved the destruction of the British settlements, and accordingly at the instigation of the natives secretly promoted by himself, he removed the English authorities and proceeded to carry his great schemes into accomplishment, always under the excuse of supporting a native local interest. The first movements of the French and their native allies were completely successful. English interests were on the verge

of ruin when the daring courage and military genius of Robert Clive saved the settlements with a couple of hundred Europeans and 800 Sepoys. He attacked and carried the city of Arcot, which he held against the utmost efforts of the allies. Dupleix was not a soldier. The management of operations in the field was left to native commanders. Clive, who thought tied to the civil service, was, as a contemporary said, "born a soldier," compelled his assailants to raise the siege. This decided the fate of India. Once launched on the tide of victory, the policy of merest expediency prevented the company from retracing their steps or refusing the advantage proffered by circumstances. In a few years the French power was annihilated, and by the year 1760 a partnership of traders in England had subdued the finest provinces of Bengal, Bahar, and part of Orissa, abounding in manufacturing towns possessed of an immense population and yielding a magnificent revenue. From that time the limits of the British empire in India have gone on steadily, increasing with but few reversees. Hyemali, Tippoo Saib, and the Mahrattas, were the great enemies which they had to meet in the field. The battles of Plassey and Assaye told the superiority of European discipline against irregular forces, however brave.—Turning from the progress of European power in southern Asia, we direct our attention to the north. We have already seen that on the first invasion of the Mongols, the Russians were placed under tribute to the Golden Horde. After Ivan the Terrible had rescued the nation from this disgraceful servitude, it happened that a Cossack chief, Jermack, having been arrested and condemned to death for his crimes, offered, if released, to extend the dominion of Russia into Asia. The conditions were accepted, and Jermack, at the head of his Cossacks, invaded Siberia, and in a battle fought near Tobolsk established himself, and gradually brought all northern Asia under Russian supremacy. The comprehensive intellect of Peter the Great saw the means of extending Russian influence. He navigated the Volga, and appreciated the uses to which the Caspian might be applied in Russian relations with central Asia. An alliance was formed with the shah of Persia, and in 1722 Peter led an army through the passes of the Caucasus to the assistance of the shah, against the Afghan invaders. The footing once obtained in central Asia by the Russians has never been relinquished. By open war or under the still more dangerous mask of friendship, the court of Russia has maintained its grasp on the feeble court of Teheran. A plot was even concocted with Turkey, the hereditary enemy of Persia, for the dismemberment of the Persian kingdom, but this was defeated by the sudden vigor and energy of the usurper, Nadir Shah, who for a brief space restored the waning glories of the Persian name, and passing the Indus pursued a career of conquest as far as Delhi. During the return of his army laden

with plunder, he was murdered by some mutineers, and again the Persian empire was dismembered,—Afghanistan being erected into an independent kingdom, by Ahmed, one of Nadir's followers. During the first quarter of the present century the Mahratta war in India occupied British attention. On the conclusion of this the consolidation of the empire by the remodelling of native governments was successfully carried on. In the second quarter the war with China, Afghanistan, and Sind, has taken place, and vast extension of territory has resulted. Important changes will no doubt follow upon the suppression of the great Bengal rebellion of 1857, which is not yet concluded as this article goes to press.—In northern and central Asia the Russians have been occupied during the present century in organizing the details of their government, and fortifying their influence over the native tribes, especially in Persia and in Mantchooria, where they have lately taken possession of the valley of the Amoor. Permanent routes of communication have been established between Europe and Asia, both by land and water. The intelligence which was formerly communicated from Europe to China in 6 months, more frequently a year, is now regularly transmitted every fortnight and occupies 2 months, while the abolition of the exclusive trading privileges of the East India company, has opened the whole south of Asia to the commerce of the world, in which the United States has been found a formidable competitor. The political distribution of Asia is precisely what might have been expected from the configuration of the surface, and the natural barriers to internal communication. The same general political outlines which have obtained for unknown centuries, still obtain—dynasties have risen and fallen, conquerors have appeared and disappeared, like fiery exhalations, but the general political divisions, stamped by nature and retained by the unalterable character of the people, still remain. The drainage areas, the plains and lowlands, the climatology, which we have passed in brief review, have determined the permanent kingdoms and empires of Asia, and have affixed to them that character of durability which, contrasted with the mobility and restlessness of the West, seems to endue all things eastern with a perennial and unalterable character. The Russian, Chinese, Indian, Turkish, and Persian dominions, occupy the mass of Asia. Turkey and Persia divide the western plateaus of Iran and Arabia. The Indian empire occupies the plains and uplands of Hind, south of the Himalaya and Hindoo Kooh. The Chinese dominions include the alluvial lands of China proper, with a part of the eastern plateau, while Russia rules over the Siberian lowlands and a great part of the Mantchoo tribes. Central Asia is under no government worthy of being so called. Of the roving tribes, the Kirgheez Tartars are in process of absorption by the Russians. The

Mongols acknowledge a limited allegiance to China. Thibet, under its peculiar priest-government, is also under nominal subjection to the Chinese. The only really independent sovereign in independent Tartary is the savage and sanguinary despot of Bokhara. The peninsula of Indo-China is divided into the kingdoms of Burmah and Siam. The political influences of Asia are balanced by British supremacy in the south, and Russian in the north. The 2 great powers have long antagonized each other at the court of Persia, the key to central Asia and northern India. The deserts of Khiva, long thought impassable, have been traversed by the untiring perseverance of Russian generals; and a permanent footing has been obtained for Russia in the provinces to the south of the Caspian, and in eastern Persia by treaty concluded in 1857. In China, too, Russian influence is greater than that of any other nation. The Chinese voluntarily exclude themselves from interest in Asiatic politics; but internal wars in that kingdom may yet produce a renewal of those tremendous movements which we have seen affect the remotest borders of Europe. In the west, Turkey holds nominal power over Arabia; but so entirely nominal is it, that she cannot protect the caravans of pilgrims to Mecca without the aid of the viceroy of Egypt. Her influence, therefore, in Asiatic affairs, is a cypher. The empire of the east, with all its concatenation of high interests to mankind, lies between Great Britain and Russia.

ASIA MINOR. See ANATOLIA.

ASIATIC SOCIETIES. See SOCIETY.

ASIMAGOMY, a large lake in Upper Canada, in lat. 48° 35' N. long. 85° 30'; length 12 miles; average breadth 8 miles; it discharges into Lake Superior.

ASINARI, FEDERICO, conte de Camerano, an Italian warrior and poet, a native of Asti in Piedmont, flourished in the middle of the 16th century. His tragedy *Il Tancredi* is considered one of the best Italian tragedies. It was first published under the title of *Gismunda*, and erroneously attributed to Torquato Tasso.

ASIOLI, BONIFAZIO, an Italian composer of music, born at Corregio about the year 1769. As a boy he was precocious, and at 8 years of age composed without instruction. In 1799, after a successful career in Turin, Venice, and other Italian cities, he established himself in Milan, as musical director to the viceroy, and remained there for about 14 years. He was a good melodist.

ASIRMINTAR, an active volcano, in the island of Onokotan, one of the most northerly of the Koorile islands, lat. 49° 40' N. long. 155° 8' E.

ASKELÖF, JOHAN KRISTOFER, a Swedish journalist, born in 1787, began life as employee in the public service, after having graduated as doctor of philosophy at the university of Lund. In the *Polyphem*, a weekly paper, which he founded in 1809, and conducted till 1812,

he opposed the Gallic tendency of the so-called classical or academical school, and thus contributed in some measure to nationalize Swedish literature. From 1812 to 1821 we find him engaged in various capacities in the service of Sweden. His last achievement in the latter year in connection with a convoy of corn to Italy failed to give satisfaction. He was connected with journalism in 1815 and 1816 as editor of the *Lifvet och Döden*, and in the subsequent year as conductor of a political periodical, in which he had Count Schwerin, and other eminent public men for collaborators. His editorial fame was, however, chiefly due to his conduct of a partisan journal, known since 1829 under the name of *Scenska Minerva*, which, owing to his intimacy with the members of the Swedish cabinet, contained accurate and trustworthy accounts of the ministerial movements, and of political affairs generally. In 1840, however, when a new ministry uncongenial to Askelöf's royalistic partisanship came into office, his paper lost its official flavor.

ASKEW, ANNE, whose name is sometimes spelled ASCOUGH, or ASCUE, an English Protestant lady, who was burned at Smithfield, July 18, 1546. She was a native of Lincolnshire, and with superior intellectual culture, had read and studied the Scriptures, and espoused the reformed opinions. Her husband, named Kyme, was a strong Catholic, and turned her out of doors. She went to London to sue for a separation, and attracted the sympathy of the queen, Catharine Parr, and many of the court ladies. Her denial of the corporeal presence of Christ's body in the eucharist caused her arrest and committal to prison. When examined before the lord chancellor Wriothesley, Bonner, bishop of London, and the lord-mayor of that city, she was asked, Whether the priests cannot make the body of Christ? She answered, "I have read that God made man, but that man can make God I have never yet read." Yet Burnet says, that after much pains she signed a recantation acknowledging that the natural body of Christ was present in the sacrament after the consecration, whether the officiating priest were a man of holy or of evil life. Her recantation did not save her. She was recommitted to Newgate, and asked to disclose who were her correspondents at court. She refused to reply, and was racked in the presence of the lord chancellor, but would disclose nothing. Her fortitude probably saved the life of the queen. As she was not able to stand after the torture she was carried in a chair to the stake, and suffered along with four others. She underwent this last trial with the same courage as the former.

ASLAN, or ASCHAN, or ASLANI, the name given to the Dutch dollar in most parts of the Levant. The word is of Turkish origin and signifies a lion, which is the figure stamped on this coin.

ASMANNSHAUSEN, a village on the Rhine in the duchy of Nassau, and in the borough of

Rüdeheim, of 600 inhabitants. It is famous for the wine of Asmannshausen, one of the best red Rhenish wines. Some judges prefer it to Burgundy. Its value lasts only 3 or 4 years.

ASMODÆUS, or ASMON, in Hebrew an evil demon, who is mentioned in the later Jewish writers. In the book of Tobit he is described as murdering the 7 husbands of Sarah, one after the other. In consequence of this he has been facetiously termed the evil spirit of marriage, or the demon of divorce. In the Talmud he is called the prince of devils, and is said to have driven King Solomon out of his kingdom. Tobit got rid of him by prayer and fasting. Asmodæus is the hero of Le Sage's novel *Le diable boiteux*.

ASMONEANS, a family of kings who reigned over the Jews 126 years. From the hands of the Ptolemies Judæa passed (198 B. C.) under the rule of the Syrian kings, in the person of Antiochus the Great. At his death the government fell into the hands of his son, Antiochus Epiphanes. The intrigues for the office of the high-priesthood (in consequence of the political power attached to it by the elder Antiochus, who had made the high priest procurator of the province) resulted in a popular insurrection. This so incensed Antiochus Epiphanes, that he resolved on crushing this politico-religious importance of the Jewish province. He therefore not only put down the insurrection with great slaughter, but, as a more complete demolition of the insurrectionary cause, ordered that the Jews should change their monotheistic worship and address supplications and offer sacrifices to Jupiter Olympus, whose statue he had caused to be set up on the altar in the temple. This offence to the religious sentiments of the people was too great, and a violent popular resistance, headed by Mattathias, great grandson of Asmoneus, was the result. Here is the beginning of the Asmonean dynasty, though, in the person of Mattathias and his 4 elder sons, it is styled the Maccabæan dynasty, while the Asmonean proper is considered as commencing in Jonathan, his 5th son, because under him first, in consequence of an alliance with Rome, did the province of Judæa enjoy an established independence of the Syrian power. The Asmonean authority descended through a succession of kings, who ruled with greater or less success, to Hyrcanus II. He was supplanted by Herod the Great, who had so ingratiated himself into the favor of Cæsar, that he received the appointment to Judæa as a Roman province. At once to pacify and destroy the Asmonean dynasty, he married Mariamne, the granddaughter of Hyrcanus, and appointed Aristobulus III., who would have been the Asmonean heir, high priest. Soon after, fearing the influence of Aristobulus, he caused him to be drowned, and so ended (35 B. C.) the Asmonean line, and Judæa passed under the Roman power. Josephus gives a lengthened account of this political period. It is also narrated in the apocryphal books of the

Maccabees. The Jews enjoyed much prosperity under the Asmonean reign.

ASOPUS, the god of the river Asopus in Peloponnesus, was a son of Oceanus, or Neptune. He was married to Metope, the daughter of another river-deity, by whom he had 2 sons and 20 daughters.

ASP, a name given to more than one species of the venomous serpents. By naturalists, it is confined to the *vipera aspis*, which is a native of the European Alps. The historical asp, with which Cleopatra is believed to have destroyed herself, after the death of Antony—

Deliberatâ morte ferocior,
Sævis liburnis scilicet invidens
Privata deducta superbo,
Non humilis mulier, triumpho—

is generally supposed to have been the *cerastes Hasselquistii*. From many circumstances, however, and more especially from the description of Pliny, it is evident that the asp of the Roman writers, generally—and it is, therefore, to be presumed the asp of Cleopatra—is the common and celebrated Egyptian species, the *naia haja*, *el haja*, *haja nascher*, of the modern Arabs. "This deadly reptile, which is a close congener of the terrible nâg of the Hindoos, *naia tripudians*, the cobradi capello of the Asiatic Portuguese, was chosen by the ancient Egyptians as the emblem of the good deity, *Cneph*, and as the mark of regal dignity. The front of the tiara of the majority of the statues of the Egyptian deities and kings, is adorned with this serpent, and Devon's figure, with the forepart erect and the wood expanded, represents it nearly as it appears on the sculptured stone." It is remarkable that the nâg is still worshipped in some of the temples in India, where the Hindoos believe that, in sagacity and the malicious tenacity with which this serpent treasures up a wrong to avenge it, it is in nowise inferior to a man. This would alone be enough to identify the sacred naia of Egypt with the sacred nâg of Hindostan; particularly when it is remembered that very strong reasons exist for believing the superstition of the ancient Egyptians and the modern Hindoos to be almost, if not identically, the same. In proof of which, it may be added that the Hindoos of Sir David Baird's army, who landed from the Persian gulf to coöperate with Abercrombie against Napoleon's lieutenants, when they beheld the colossal idols of the ruined Egyptian shrines at Teutyrâ and Thebes, acknowledged them for their own gods, and worshipped them. The description of Pliny, however, while it identifies the asp of the Roman writers unmistakably with the hooded *el haja*, is doubly curious as referring to the story of its tenacious memory and treasuring up of wrong; which belief has, therefore, continued unchanged since his day, perhaps since the day when the magicians of Pharaoh converted their serpents into rods before Moses—a trick resembling which is still played with this very asp, by the serpent-charmers of the present time, who have the

power of throwing it into a cataleptic state, during which it is as rigid and immovable as a wand. The passage of Pliny is as follows: "The neck of the asp is capable of distension, and the only remedy against the bite is the immediate amputation of the wounded part. This animal, otherwise so much to be dreaded, has a sentiment, or rather a kind of affection, truly wonderful. It never lives alone, the male and female being constantly found together; and if one happens to be killed, the other seeks with the utmost fury to avenge its death. It knows and selects the destroyer from among crowds, it follows him to great distances, surmounts every obstacle, and can only be deprived of its revenge by the most speedy flight, or the intervention of some rapid river." Nor will it be altogether well for modern philosophers, or for those moderns who deem it philosophy to deny whatsoever they do not understand, too much to ridicule the statement of the old naturalist. Not only because it is at least worth the while to investigate, before discussing, the truth of a story which has endured unchanged for nearly 18 centuries, and which exists, in the same form, in the most remote parts of the world, but because stories of old writers, long held in contempt as fables, have often been proved to be most true; and because—more pertinently—some strange facts have recently come to light concerning the manner in which serpents will instinctively find the way to the place where their mates have been killed, and of the unnatural affection which they retain for their carcasses. The *el haja*, *naia haja*, or *haja nascher*, is of a dark and greenish hue marked with brownish, is hooded like the cobra, when it expands itself in rage, but wants the peculiar mark on the back of the neck which characterizes the Asiatic species, and which has been compared to a pair of spectacles. It varies in length from 8 to 5 feet, and is one of the deadliest serpents known. The bite produces acute local pain in the first instance; then a sense of deadly sickness; after which the sufferer falls into a comatose state, with convulsive fits, each less violent than the preceding one. In the last of these he dies, usually not many minutes after being struck; although that must in some degree depend on the nature of the tissue wounded. Owing to the almost instantaneous dispersion of the poison through the blood, it is not believed that excision could be of the slightest utility; nor is there any certain antidote known, against the deadly fluid, when once introduced into the veins. When she was bent on dying, Cleopatra could scarcely have found a surer or more painless agent.

ASPARAGUS (Gr. *σπαράσσω*, to tear), a genus of perennial plants, deriving their name from the prickles with which some of its species are furnished, belonging to the natural order of the *Liliaceæ*, to the sub-order of the *asparageæ*, and differing only in the fruit from the *asphodeleæ*. The genus is distinguished by tuberous root-stocks, branching stems, thread-

like leaves, jointed pedicels, a 6-parted perianth, small greenish-yellow or white flowers, and a spherical berry. It embraces 26 species, many of which become hardy shrubs, and climb with their spiny branches as if by tendrils. A few of them are common in the East Indies, and around the Mediterranean; most of them are rare and of little importance, and none are natives of this country. Of the wild species, the most widely spread are the *acutifolius* and the *albus*, the needle-leaved, and the white, the former of which is common in France, Spain, Barbary, and the Levant; the latter is found in the same countries, France excepted, and is remarkable for its white and flexuous boughs in the midst of its green and caducous leaves; and the young shoots of both of them are eaten by the Arabs and Moors. But much the best known member of the genus is the *officinalis*, the common or garden asparagus, esteemed as a delicate culinary herb from the time of the ancient Greeks, and now cultivated in nearly all the gardens of Europe and America. It is thought to be native both on the shores of England and in rocky and sterile districts in Europe and Asia, and when it has attained its full development, is an elegant plant, from 3 to 4 feet high, with numerous branches loaded with fine and delicate leaves, and covered with small, greenish-yellow, bell-shaped, and almost solitary flowers. The asparagus served upon the table is the young and tender shoots of the plant, cut when but a few inches from the ground, and prior to ramification. It loves a dry, deep, and powerfully manured soil, and is raised from seeds either planted in seed-beds in the spring and transplanted the next year, or planted at first where they are to remain. During the first 2 years the young heads should not be cut; half of them may be cut in the third, and after that the full crop. The supply will begin to diminish after 10 or 12 years. The beds for asparagus are usually about 4 feet broad, and should be manured and trenched at least $2\frac{1}{2}$ feet deep. The plants are in rows about a foot apart, and are thinned out till they stand about 6 inches from each other in the row, and in growing, a cluster of heads branch from each root. The crop may be reaped as often as it appears, being cut from a little below the surface of the ground, yet the plant degenerates by being cut late in the season. The bed should be annually, in the autumn, replenished with manure, dug in between the rows as deeply as possible without injuring the roots, and covered with pulverized manure, sea-weed, or other litter during the winter, as a protection from the frost. Asparagus is easily forced by the use of hot-beds, but the process of transplanting always injures or destroys the roots, and if, instead of transplanting, the bed be covered and the trenches filled with hot dung, which mode is sufficient to forward the crop one or two weeks, care must be taken to give the plants time to rest, and recover in the later part of the season.

ASPASIA, born in Miletus, was a daughter of Axiochus, and one of the most celebrated women in the most brilliant times of Athens and Greece. She united to beauty and womanly grace a great and varied culture of mind, and was devoted to politics and oratory. Her house in Athens was the rendezvous of the most prominent and gifted men. Socrates visited her often, and in the dialogues of Plato, Socrates puts into the mouth of Aspasia the beautiful obituary speech made before Menexenus. It is said that she taught Pericles the art of oratory. A deep and unshaken love united both. When Pericles was surnamed the Olympian Zeus, Aspasia was called Hera. Finally, Pericles separated from his wife and espoused Aspasia. The enemies of Pericles, and above all Aristophanes, accused her of having instigated by her influence the war with the Samians and the Peloponnesian war. Plutarch denies this, and Thucydides does not mention her name in connection with the subject. The opponents of Pericles publicly accused Aspasia of contempt toward the gods. Pericles defended her before the judges and won her cause. He had a son by her, and after his death Aspasia married Lysicles, a cattle dealer, who, by her influence, soon became a very eminent man in Athens. In antiquity her name was used to describe the most charming women. But as in Athens foreign born women were almost outlawed, and their children, even if born in lawful marriage, were considered as illegitimate, Aspasia is often included in the number of celebrated courtesans.

ASPASIE (CARLEMIONELLI), born in 1772, executed in 1795, one of the most terrible of the terrible women of the French reign of terror. She was believed to have been in a lunatic asylum, almost from her childhood up to the time of the outbreak of the revolution, when she effected her escape and took an active part in the exciting events of the day. When a famine desolated Paris, and added its horrors to the other horrors of that blood-stained era, Aspasia had made up her mind that the scarcity was artificially produced, in order to starve the people. She yearned for vengeance, and, after having made several ineffectual attempts to assassinate Boissy d'Anglas, the temporary president of the convention, whom she supposed to be the author of the famine, she put herself, on the 1st Prairial, 1795, brandishing a knife in her hand, at the head of the infuriated women who invaded the hall of the convention. They fired upon the deputy Féraud, and as he made an effort to raise himself from the ground upon which he had been thrown by the ball, Aspasia rushed ferociously upon the unfortunate man, smashing his head with her wooden shoes, the savage shouts and frantic cheers of the other women making the bewildering excitement of the fiendish scene perfectly appalling. She next pounced with her knife upon Camboulin, whose escape from her murderous attack was almost miraculous. She was arrested, sentenced, and

executed on the guillotine on the 24th Prairial, 1795. She obstinately refused to disclose the name of any of the other women, never lost even for a single moment her proud, cool self-possession, and expressed to the last her regret that Boissy d'Anglas and Camboulas had escaped with their lives. The facts of her life, as recorded by history, do not reveal any thing to warrant the plea of insanity, which was set up upon the popular belief that she had been an inmate of a lunatic asylum. She comes before us as a fanatical woman, whose passions being wrought up to the highest pitch by the excitement of the times, degenerated into a sanguinary fury. She was only 28 at the time of her death.

ASPECT, an astrological term, occasionally used in astronomy, defined by Kepler as "the angle formed by the rays of two stars meeting on the earth, whereby their good or bad influence is measured."

ASPEN, a species of the great genus *populus* (*arbor populi*), being planted in public places by the Romans) or poplar, of the family *amentaceae* (katkin-bearers) Juss., *diaccia ootandria* L. ament cylindric, scales lacerate, perianth turbinate, oblique, entire, anthers 8 to 30; female flower; stigma 4 cleft, capsule superior, 2 celled, 2 valved, many-seeded; seeds pappous. The aspen belongs to Lindley's order *salicaceae* (willows). Of about 40 species of *populus*, belonging to Europe and North America, the aspen furnishes 3, viz.: *P. tremula*, leaf-lobes much developed, teeth distant, smooth on both sides, petioles long, vertically compressed, hence trembling in the faintest breeze; bark gray or greenish; roots trailing in long shoots; easily propagated, especially in sandy soil; wood white, soft, employed for small utensils, burning rapidly with little heat; the bark contains tannin; indigenous in Europe. *P. tremuloides*, indigenous in North America; resembles the preceding, but its leaves are smaller, suborbiculate, abruptly acuminate, serrulate, pubescent, and glandulous at the margin; wood light, used sometimes for summer hats; west of the Mississippi in scanty groups, in narrow valleys, near springs, it is smaller than in the north and middle states, where it grows to about 20 feet. *P. grandidentata* (the American large aspen), leaves oval-acuminate, unequally and sinuously great-toothed, almost glandless, smooth on both sides, villous when young; bark smooth, greenish, unbroken; rare in the middle states. All species of *populus* contain more or less of the febrifuge alkaloid called salicine. The buds of many are coated over with a balsamic resinous matter, especially the *P. balsamifera* or *tacamahaca* of Siberia and Canada, and *candicans* (balm of Gilead).

ASPERN and ESELING, a town and village on the north side of the Danube, the former about half a league, the latter about 2 leagues below Vienna, situated on the great meadowy plain of the Marchfeld, extending from the river to the wooded mountain heights of the

Bisamberg, celebrated for the 2 days' terrible fighting between the French and Austrians, on May 21 and 22, 1809, and the first defeat of the emperor Napoleon, who was here beaten and forced to retreat by the archduke Charles.—In the early part of the campaign, Napoleon, with the grand army, had made his way through the Tyrol, up the rivers Inn and Isar; had defeated the archduke at Eckmühl; forced him across the Danube, into the mountains of Bohemia, at Ratisbon, which he took by assault, thus interposing between the Austrian army and capital; and then, detaching Davoust with 40,000 men to amuse the imperial general, had descended the Danube, and made himself master of Vienna; while from the Italian side his lieutenants, Eugene Beauharnois, and Macdonald, were advancing victoriously through Dalmatia, Carniola, and up the valley of the Muhr, in which Jellachich was severely defeated, to join their commander. In the mean time, the archduke Charles, who since his defeat at Eckmühl had been moving slowly down the river, on the northern side, hoping for an opportunity to fight at advantage and rescue the empire under the walls of the capital itself, took post with his army on the Bisamberg, over against the island of Lobau, and another smaller islet, which here divide the Danube into 4 channels.—The archduke was at the head of 100,000 men, and was in hourly expectation of being joined by his brother, the archduke John, with 40,000 more, which would have been raised to 60,000, had that prince effected his junction, as he was explicitly ordered to do, with Kolowrat at Lintz, and which would have occupied a most commanding position in the rear of Napoleon, and on the principal line of his communications.—It was Napoleon's object, who had concentrated under his own orders 80,000 admirable soldiers ready to take the field, including the imperial guard and the reserve cavalry of Bessières, to cross the Danube and give battle to the archduke, in the hope of crushing him before the arrival of his reinforcements. To this intent, he bridged the river from the right bank to the island of Lobau, with a structure of most solid materials, supported on 68 large boats and 9 huge rafts, and from Lobau to the Marchfeld, midway between the villages of Aspern and Essling, with a slighter fabric of pontoons; and on the morning of the 21st began to pass his troops across, with the utmost alacrity and diligence. The Austrian commander, from his mountain position, perceived the rashness of the manœuvre, by which the emperor was pushing his vast host across a wide and rapid river, by means of a single bridge, which could only admit of a slow and gradual defiling of the men of all arms, over its long and narrow causeway, difficult to cavalry, yet more difficult to artillery; and which, in case of his being forced to retreat, scarcely offered a possibility of saving the army; and perceiving it, resolved at once to avail himself of the opportunity of crushing half the French host on

the northern bank, while the rest of the army was either in the act of passing, or on the southern side. Sending orders to Kolowrat, Nordman, and the other officers in command up the river, to prepare boats laden with heavy materials and combustibles for the destruction of the bridges, when the time should arrive, the archduke kept his great army out of sight, ordering his cavalry and outposts only to make a nominal resistance, and then to fall back before the advance of the French, which was led by Massena; until at 12 o'clock the movement of the enemy was sufficiently developed, above 40,000 French being already on the northern shore—to justify his assuming the initiative.—At that hour, descending from the wooded heights of the Bisamberg, with 80,000 men, of whom 14,000 were splendid cavalry, and 288 cannons, he precipitated himself upon the enemy, making the 2 villages of Aspern and Essling, on Napoleon's flanks, the principal points of his attack; the central space between these 2 strong places, which were built of stone, with garden walls and many enclosures, was occupied by the tremendous Austrian batteries, guarded chiefly by cavalry, with Hohenzollern's infantry in reserve in the rear. The fighting on both the flank attacks was terrific, and the fury of the assaults and obstinacy of the defence almost unparalleled in the history of war. Both villages were taken and retaken several times, and so terribly did the Austrian artillery devastate the French lines, that Napoleon ordered a grand charge of cavalry to take the batteries, if possible. The superb French cuirassiers of the guard charged with their usual impetuous valor, routed the Austrian horse, and would have carried the guns, but that they were hastily withdrawn, and the infantry formed in squares, which, as at Waterloo afterward, defied all attempts to break their impenetrable formation, and at last defeated the horse, and compelled them to retire, shattered and decimated, into their own lines. In the mean time, Aspern was taken by the imperialists, their centre was gradually but irresistibly gaining ground, in spite of the gallant devotion of the cuirassiers, who charged again and again with constantly diminishing numbers, and who alone prevented the French lines from being broken through.—Night brought a brief cessation of the strife; but the French had suffered a decided defeat in a pitched battle; their left flank was turned, their centre forced back almost to the bridges; and although Essling, on their right, had been defended by the gallantry of Lannes, it was surrounded by the Austrians, who slept on their arms among the French dead, waiting only the return of light to renew their offensive operations.—During the whole night, however, fresh forces were defiling across the bridges, and debouching upon the Marchfeld, and at daybreak, after all the losses of the preceding day, Napoleon had full 70,000 men in line, while Davoust was beginning to cross over at the head of 80,000 more. The battle began

by renewed attacks on the two disputed villages; Essling was carried by the imperialists, and Aspern retaken by the French. Both villages were the scene of desperate fighting all day long, and both were taken and retaken several times with the bayonet, but at last remained in the hands of the Austrians, who, in the evening, advanced their artillery beyond both places, and actually crossed their fire upon the rear of the French. But during these bloody conflicts, Napoleon, who was relieved by his vast accession of forces from the necessity of acting on the defensive, had recourse to his favorite manœuvre of an overwhelming attack on the centre. At the head of a huge column of above 20,000 infantry, with 200 cannon preceding them, and a tremendous cavalry force in their rear, he launched Lannes and Oudinot directly on the Austrian centre, where the lines appeared the weakest, between the left of Hohenzollern and the right of Rosenberg. At first, this tremendous attack seemed to be perfectly successful; the Austrian lines were forced; a huge gap made between Rosenberg and Hohenzollern, into which the cavalry burst with appalling fury, and cut their way clear through to the reserves of the prince of Reuss, far in the rear; and already the cry went abroad, that the battle was lost; but the archduke Charles was equal to the emergency; the reserve grenadiers were brought up at double quick time, and formed in a checker of squares; the numerous dragoons of prince Lichtenstein came galloping up behind them, and, with the colors of Zach's corps in his own hand, the gallant prince restored the battle.—The terrific column of Lannes could advance no further, but halting, began to exchange volleys with the squares, and, unable to deploy, was crushed by the concentrated fire of the batteries, playing on it at half musket shot. In vain the cavalry charged home on the bayonets of the squares, for not a square wavered or was broken; and, at length, the Austrian dragoons of the reserve, coming up with loud shouts, charged the cuirassiers in their turn, routed them, and drove them in confusion back upon their infantry, and completed the disorder. Immediately after this repulse, Hohenzollern broke through the French lines on the right of the centre with 6 Hungarian regiments of grenadiers, and carried all before him, even to the rear of Essling, which, with Aspern, were both carried finally by the imperialists. From these villages, as the Austrian centre was now driving all before it, in spite of the unparalleled exertions of the French army, which was now in full retreat to the island of Lobau, the Austrian batteries crossed their fire, with fatal effect, on the bridges, every shot telling on the crowded masses of men and horses.—Meanwhile, to augment the perils of the French, the bridge connecting the island with the southern shore was broken by the Austrian fireboats and rafts, and all escape from the island was rendered, for the moment, impossible. Still, with

unexampled firmness the rear-guard of the French held the Austrians in check, until, at midnight, the last of the enemy having withdrawn from the field of battle into the island, the thunder of the Austrian batteries ceased, and the exhausted artillerymen fell asleep beside their guns, worn out by the fatigues of that unparalleled and glorious day.—Seven thousand French were buried on the field of battle by the victors; 29,798 were carried, wounded and prisoners, into Vienna. Lannes and St. Hilaire were mortally wounded, and died a few days afterward. On the side of the imperialists, 87 superior officers, and 4,200 privates, were killed; beside 16,300 wounded. But the victory, gained under the very walls, and almost within sight of the capital, was complete; the enemy, broken, defeated, and dispirited, were cooped up in the narrow limits of the island of Lobau, and, had the archduke John, in obedience to his orders, made his appearance in the rear of the French with 60,000 fresh men, on the morning following the defeat of Aspern, it were difficult to say what might not have been the result.—But Napoleon's time had not yet arrived, and the nations were yet doomed to suffer 4 years longer, before the final downfall of the military colossus should restore them to their lost freedom, by the fields of Leipsic and Waterloo.

ASPHALTITES. See DEAD SEA.

ASPHALTUM, also called mineral pitch, compact bitumen, and Jews' pitch, the last name given it from its abundance in the lake Asphaltites or Dead sea of Judæa. It is one of the series of substances resulting from the changes which vegetable matters buried in the earth have undergone. It is more bituminous than the coals, and when pure is of the consistence of resin—but this varies with the temperature and with the amount of liquid bitumen or petroleum, which may be mixed with it, holding the more solid asphaltum in solution. It is, moreover, often intermixed with stony substances, and is even known to contain 80 per cent. of carbonate of lime. Pure asphaltum is insoluble in water, alcohol dissolves out of it about 5 per cent. of a resinous substance, and ether takes up 20 per cent. of another resin, that is not affected by the alcohol. It yields also a volatile oil. The remainder is a substance named by M. Boussingault, *asphaltene*, the composition of which is C_{20}, H_{16}, O_2 . Asphaltum burns readily with a red smoky flame, and leaves no ashes except those due to its impurities. It is but little if at all heavier than water; its color is black and dark brown, and does not soil the fingers. It melts at a temperature of boiling water, and consequently is unfit for use as fuel, and cannot be economically used for gas. Most of the geological formations contain it, but it is particularly common in the secondary and tertiary calcareous and sandy strata. In the primary rocks it is found only in small veins. It is obtained in large quantities on the shores of the Dead sea, in

Judæa, and is found floating upon its heavy saline waters. In the West India islands it is often met with, but most frequently the bitumen is in the liquid form called petroleum. The ancients made much use of this substance as a cement, and many varieties of it are well adapted for this use. The walls of Babylon were built with it. It was also used in embalming, probably dissolved in naphtha and injected into the hollow parts of the body. At present it is employed with sand and gravel for making pavements and roofs impervious to water; and also as an ingredient for the varnishes, called japans. Dr. Ure recommends it very highly for concrete for walks—but its want of uniformity of composition and uncertain supply in this country will probably prevent its taking the place of coal-tar, which though very likely inferior to some qualities of asphaltum, is adapted to most of its uses. The subject is further treated under BITUMEN. A patent for making a lubricating oil from asphaltum, like that obtained from the pitch lake of Trinidad, has recently been obtained in England by Dr. Simpson (who first applied chloroform as an anæsthetic agent), of Edinburgh and Prof. W. Thompson, of Belfast. The asphaltum according to the invention is first distilled at a temperature a little below that of a red heat. This produces a thick liquid, which is again distilled at the same temperature. The second distillation brings over a more limpid liquid—a fine residuum of charcoal being left in the retort. This oily liquid is subjected to stirring or agitation in a wooden vessel with about one-tenth of its bulk of sulphuric acid. A large proportion of the impurities unites with the acid, and when allowed to settle, falls to the bottom of the vessel. The clear liquid is then drawn off, and agitated with a caustic alkali or mixture of quicklime and chalk, allowed to settle and the clear drawn off. The resultant oil is then agitated with sulphuric acid as before, and again with the alkali or chalk, allowing time after each operation for the impurities to settle. When the oil has become a pale yellow color, it is put into an iron retort and distilled at a moderate heat, and about one-third of the quantity comes over as naphtha. The heat is then elevated, when the remainder comes over (leaving but a small residuum of charcoal), and is an oil nearly limpid. It is not equal to many other oils for lubrication, but one part of sperm oil mixed with nine parts of it makes a cheap and good oil for machinery. As vast quantities of oil are now employed for lubrication, and as the demand for it must increase with the progress of machinery of all kinds, a knowledge of every new source from which a supply can be obtained is of no small importance.

ASPHALTUM, ARTIFICIAL, a preparation of coal tar boiled to expel the volatile oils, which hold it in solution, and the water it contains. This is then mixed, in its condition of boiling pitch, with broken stones (limestone is the best), and finally it is run into moulds

upon a large table, which is divided into compartments to give it the form of blocks; or it is applied at once to its use as a covering for roofs, bridges, &c. The volatile oils may be collected and saved, but they are commonly allowed to escape. Two barrels hold about 1,000 pounds of tar; and in boiling this quantity one-fourth, or 250 pounds, is lost, of which about 210 pounds is essential oil, and 50 pounds is water. The remainder is fatty pitch. As the oils are valuable for the preparation of varnishes and lamp-black, and lubricating machinery, and may be used for adding to the illuminating power of gas by passing it over their surface, it seems that more attention might well be given to its preservation. The use of asphaltum for cement will be found more fully treated of under the head of BITUMEN.

ASPHODEL (*asphodelus*), a genus of perennial plants embracing several ornamental species, belonging to the natural order *Liliaceae*, and to the sub-order *asphodeleae*. The name is of Greek derivation, implying the peerless or kingly flower, and the asphodels have long been among the favorite ornaments of the garden. They are all natives of the old world, and are found abundantly in the sunny districts of Greece, Sicily, Asia, and Barbary. The genus comprises 12 species, all of which have a bulbous root, erect undivided stem, long leaves, and showy flowers arranged in clusters, which in most of the species are spikes. The *luteus*, or common yellow species, is an old inhabitant of European gardens, into which it was introduced from the shores of the Mediterranean. It is branchless, about 2½ feet in height, has scattered, and almost pilliform leaves sheathing the stock, and flowers of a beautiful golden yellow. It blossoms during 6 weeks in mid-summer. The *ramosus*, or white and branched asphodel, has a naked stem with ramifications near the summit, each of which is terminated by a spike of white star-shaped flowers having their petals streaked with purple. This is the famous herb which Homer describes as growing in the meads of Elysium. The ancients had a superstition that the manes of the dead were nourished upon its roots, and they therefore planted it in the neighborhood of sepulchres, and made it sacred to Proserpine. It still covers the hills and valleys of old Apulia, where it furnishes nourishment to the sheep. The *albus*, or upright asphodel, differs from the preceding by having a branchless stem, and also by having its flowers a little smaller and nearer together. The other species of asphodel are much less frequently cultivated in gardens than the 3 preceding.

ASPHYXIA (Gr. *ασφυξία*, formed of the privative *a*, and *σφυξίς*, pulse), a temporary or a final suspension of the motion of the heart, and the pulsation of the arteries. The word is commonly applied to suffocation, or the cessation of breathing, irrespective of the motion of the heart, which may continue some time after respiration ceases.—Respiration

and pulsation are, however, so intimately connected with each other in the continuance of life, and in the most approved methods of restoring animation after temporary suffocation by hanging, drowning, freezing, inhaling noxious vapors, and by other accidental causes of asphyxia, that no real inconvenience occurs from the apparent misapplication of the words cessation of the pulse, to the more prominent correlative, suspended respiration.—The prompt and most appropriate means of restoring life, in cases of temporary asphyxia, have called forth some most excellent remarks from learned men, of late, and caused the modes of treatment formerly adopted to be modified with much advantage. Not to dwell on by-gone methods, we may give at once an outline of the scientific views of Dr. Marshall Hall, with his remarks on the customary modes of treatment, and his reasons for supplanting them. The method he proposes is termed the "Ready Method in Asphyxia," because no apparatus of any kind is required. "The main indications are to renew inspiration, and improve the circulation; the means are physiological, and physical. All obstructions of the glottis being removed by placing the patient in the prone position, i. e. with the face to the ground, in which position any fluids and the tongue itself fall forward, our first effort is to excite respiration, physiologically; should this fail, our second is to imitate the acts of respiration, mechanically. Our next object is to endeavor to improve the circulation, which is done by promoting the flow of the venous blood, and to restore warmth in the limbs. Here, again, as we proceed, we must revert to the physiological principle of exciting respiration from time to time. All these indications are effected by the following short rules:

1. Treat the patient instantly, on the spot, in the open air, freely exposing the face, neck, and chest, to the breeze, except in very severe weather.

2. Send with all speed for medical aid and for articles of clothing, blankets, &c.

I. To clear the throat.

3. Place the patient gently on the face, with one wrist under the forehead. (All fluids, and the tongue itself, then fall forward, and leave the entrance into the windpipe free.)

II. To excite respiration.

4. Turn the patient slightly on his side; apply snuff, or other irritant to the nostrils; and dash cold water on the face, previously rubbed briskly until it is warm.

If there be no success, lose no time, but apply the 3d rule.

III. To imitate respiration.

5. Replace the patient on his face.

6. Turn the body gently, but completely on the side, and a little beyond, and then on the face, alternately, repeating these measures deliberately, efficiently, and perseveringly, fifteen times in the minute, only. (This number of thoracic movements per minute agrees with the natural order of respiratory thoracic dilatations and contractions, corresponding with a slow movement of the heart, averaging something less than sixty pulsations per minute, and therefore merits due attention.) The rationale of the operation is this: When the patient reposes on the thorax, this cavity is compressed by the weight of the body, and expiration is promoted; when he is turned on the side, this pressure is removed, and inspiration is facilitated.

7. When the prone position is resumed, make equable but efficient pressure along the spine, removing it immediately before rotation on the side. (The first measure augments expiration, the second commences inspiration.)

IV. To induce circulation and warmth.

8. Continuing these measures, rub the limbs upward, with a firm pressure and with energy, using handkerchiefs, &c.

8. Replace the patient's wet clothing by such other covering as can be instantly procured, each bystander supplying a coat or waistcoat. Meanwhile, and from time to time, proceed to the fifth rule.

V. To excite inspiration.

10. Let the surface of the body be slapped briskly with the hand, or,

11. Let cold water be dashed briskly on the surface, previously rubbed dry and warm.

The measures formerly recommended by the medical profession, and now rejected by those who agree with Dr. Marshall Hall, are, removal of the patient, as involving dangerous loss of time; the bellows, or any forcing instrument; and, the warm bath, as positively injurious; galvanism, and the inhaling of oxygen, as useless. "The inhalation of dilute pure ammonia has in it more of promise."—For the treatment of still-born children, excitement of the skin, the alternate cool and hot bath (the cool temperature being 60°, and the hot 100° of Fahrenheit), postural respiration, as explained above, and rubbing with pressure upwards, are the remedies approved by practical success. As many practitioners still think well of the warm bath, as a means of resuscitation, we cannot do better than give the rationale of the fatal tendency of the warm bath in asphyxia. There is a physiological relation between the circulation and the respiration, any deviation from which, in either direction, is of a fatal tendency. In the course of the systemic (not the pulmonic) circulation, carbonic acid is formed; in respiration, the oxygen necessary for the formation of this carbonic acid is supplied, and the carbonic acid, so formed, is evolved from the system.—The immediate baneful effects of the suspension of respiration arise from the privation of oxygen, and from the retention of the carbonic acid previously formed, which becomes a blood-poison. An animal placed in perfectly pure nitrogen or hydrogen gas dies instantly in violent convulsions. And this is doubtless owing to the privation of oxygen, for carbonic acid gas might be exhaled into nitrogen or hydrogen gas. But an animal dies also in air, consisting of such a proportion of carbonic acid with oxygen, as to prevent the evolution of carbonic acid from the blood, although the quantity of oxygen might be so great that a taper blown out, and burning only as a spark, would be instantly kindled into a flame.—If without producing effects so sudden as those here described, we change the relative proportion of the respiration and the circulation, morbid phenomena are produced special to each case. If the circulation be disproportionately augmented, carbonic acid is formed, and being morbidly retained, slighter convulsion and slower death ensue. If the respiration is unduly and disproportionately augmented, the animal is cooled, for mere pulmonary respiration is a cooling process, by the difference of temperature of this inspired and expired air; and in this case, also, the animal dies, but now from loss of temperature. This latter is the case in the asphyxiated patient, if the respiratory movements be unduly hastened, that is

disproportionately to the rapidity of the remaining circulation. On the other hand, if in the asphyxiated we excite the circulation, without simultaneously and proportionately inducing the respiratory movements, we destroy the patient by carbonic acid, formed in the course of that circulation, and uneliminated by respiration. This statement leads to the proper subject of these observations, *i. e.* the rationale of the injurious and fatal tendency of the warm bath, in asphyxia, for it is injurious, and has, doubtless, of itself, proved fatal in cases in which the patient, without it, would have spontaneously recovered. In such a case, it is surely not less essential to the progress of science, and the medical art, to remove error than to establish truth. Warmth is so obviously a stimulus, and a stimulus is so apparently required for a patient taken out of the cold water, in a state of asphyxia, that in recommending the warm bath, we seem to be addressing ourselves to the common sense of mankind, and it was a step in advance to entertain a doubt on the subject. But when we begin to experiment, we learn that an animal deprived of respiration by being submerged under water, lives longer in cool water than in warm water, and learn to consider whether, in fact, coolness is not more favorable to life in the asphyxiated from submersion, than warmth. We recall to mind, too, that animals bear abstraction of respiration in proportion to their coolness. The hibernant animals, and the batrachian tribes, will scarcely drown at all. If a kitten be first cooled, or if it be immersed in cool water, it will not drown so soon as it would do if submerged at its ordinary temperature, in water of the same temperature. These facts have been established by Edwards, Brown-Séquard, and Dr. Marshall Hall. Again, all have heard of the Grotto del Cane, at Naples. The poor dog is put into the carbonic acid, and taken out asphyxiated. It is plunged, not into a warm bath, but into the water of the adjoining Lago Agnano, and taken out, restored.

ASPINWALL, a town upon the island of Manzanilla, in Navy or Limon bay. On the N. E. point of the island there is a lighthouse in lat. 9° 28' 80" N. long. 79° 53' W. This place was originally founded by the Panama railroad company as their Atlantic depot, and received its name from Mr. Wm. H. Aspinwall, a New York merchant, who was one of the first projectors of the railroad. The people of New Grenada, to which state it belongs, have never recognized the name, by which it is exclusively known in the United States, but still persist in calling it Colon. The settlement of the town was first commenced in 1850, when the engineers and laborers arrived upon the island of Manzanilla for the purpose of making the preliminary survey for the railroad across the isthmus of Panama. It has gradually grown up into a town of considerable importance, with the progress of the great enterprise to which it is indebted for its origin, and now contains some 200 houses and

about 1,500 permanent inhabitants. Its trade is exclusively dependent upon the railroad, and most of its people are employed either as laborers or officials in connection with that enterprise. The buildings are chiefly hotels, for the accommodation of travellers across the isthmus, warehouses for the temporary deposit of goods in *transitu*, and depots and offices belonging to the railroad company. The shipping is composed of steamers plying between Aspinwall and New York, Aspinwall and Havana, Aspinwall and New Orleans, engaged in the California trade, and the English West India mail steamers, which stop at Aspinwall in the course of their route to and from the gulf of Mexico, the West Indies and England. In addition to these steamers there are occasional small rigged vessels used for the trifling local trade of the place. The island of Manzanilla, upon which Aspinwall is built, lies on the east of Navy or Limon bay, near its opening from the sea. It is this bay which forms the harbors of the town, the chief one of which is on the west, where the largest ships can anchor within a short distance of the shore; but such is the exposure to the fierce northers which occasionally blow, that no vessel is perfectly secure. It is intended, however, in the course of time, to remedy this natural disadvantage by the construction of a breakwater from the N. W. point of the island. There is also a roadstead on the east of the island, where there is a considerable depth of water, but it is seldom entered by large vessels. The island of Manzanilla is about a mile in length and a half mile in width, extending north and south. It is of coral formation, rising but a few inches above the level of the Atlantic at high tide. Until those connected with the railroad commenced clearing it, the island was covered with a forest of mangrove, mahogany, and manzanilla, from which the island derives its name. From the low level of the place, the marshy nature of the soil, the great accumulation of decomposing vegetable matter, the heat of the climate, and the abundant rains, the island is exceedingly unhealthy, and local miasmatic fevers are greatly prevalent.—Aspinwall being the Atlantic depot of the Panama railroad is subject to a periodical excitement each fortnight on the arrival of travellers to and from California. Those arriving from the East begin their transit across the isthmus, and those from the West end theirs here. When these transitory visitors reach Aspinwall, there is ordinarily a great enlivenment of the usually dull time, and much of the prosperity of the small traders, innkeepers, and barkeepers, depends upon these hurried visitors. Aspinwall and its neighborhood are very deficient in supplies for the wants of the inhabitants. Fresh water is only obtained by collecting in large iron tanks the rain which falls during the wet season, and the chief articles of food come from the New York markets. The neighboring coasts and interior country supply, however, a few fowls, melons,

cocoanuts, pineapples, yams, and oranges. The harbor also abounds in fish, although this is a resource which has not been much employed. The milk used by the inhabitants, in consequence of the want of pasture and necessary scarcity of milch cows, is obtained from goats, which generally feed upon the refuse vegetable garbage in the town. Aspinwall, though belonging to New Grenada, has a separate civic government, of which the control is possessed chiefly by residents from the United States, in the employ of the Panama railroad. There is a hospital in the town, a small church, of which a chaplain paid by the railroad company performs the clerical duty, and a newspaper.

ASPINWALL, WILLIAM, M. D., an eminent physician, particularly famous for his skill in treating smallpox by inoculation, was born in Brookline, Mass., May 28, 1743, and died April 16, 1823. He graduated at Harvard college in 1764, and studied his profession with Dr. Benjamin Gale of Connecticut, and at the Philadelphia hospital. He commenced practising in Brookline, but when the revolutionary war broke out he endeavored to obtain a commission in the army, but was finally induced by Gen. Warren to accept the position of surgeon in Gen. Heath's brigade, and through his exertions was soon after made deputy director of the hospital on Jamaica plain, near Boston. He took part, as a volunteer, in the battle of Lexington. After the death of Dr. Boylston, the pioneer of inoculation in America, he engaged extensively in that branch of practice, opened hospitals for the purpose in Brookline, and probably inoculated a greater number of persons than any other physician in the country. When vaccination was first introduced, although well aware that if successful it would injure him pecuniarily, he tested it impartially, and frankly acknowledged its superior efficacy. His general practice was very large, and engrossed his time and attention for 45 years. During the greater part of this period he made his rounds on horseback, often riding 40 miles a day. For several years before his death he was deprived of his sight, owing to a cataract brought on by his nocturnal studies. He bore this privation with exemplary patience.

ASPIRATE, in grammar, the *spiritus asper* of the Greek denoted thus (´) in contradistinction to the sign prefixed to unaspirated words, and called *spiritus lenis*, denoted thus (˘). It imports that the letter over which it is placed ought to be strongly aspirated, as if an *h* were prefixed, as of ἑλληνες, the Greeks, pronounced *hoi Hellenes*.

ASPLAND, ROBERT, a dissenting minister of England, was born Jan. 23, 1783, in the village of Wicken, in the county of Cambridge, died Dec. 30, 1845. His father was a worthy tradesman of the same name, originally a zealous Churchman, but for the last 20 years of his life an earnest dissenter, at first of the Calvinist Baptist denomination, and finally a Unitarian. The son received a good English and classical

education, first at Soham, and then in succession at Islington, Highgate, and Hackney. By the recommendation of those noted men, Robert Hall and Andrew Fuller, he was admitted to the Bristol academy, on the Ward foundation, in 1798, after preparatory study with the Rev. Joseph Hughes of Battersea. In 1799 he entered the university of Aberdeen, but in the following year he resigned his scholarship on account of the change in his theological opinions, which prevented him from remaining longer a beneficiary upon a Calvinistic endowment. For a year or two he tried to occupy himself with trade, but notwithstanding his good prospects of business he took no interest in it, and resumed his theological pursuits. On July 21, 1801, he was ordained pastor of the General Baptist congregation at Newport, Isle of Wight, with full liberty to preach Unitarian doctrines. When young Aspland entered the ministry he was not 20 years old, yet he had a very various and marked experience of men and opinions. In his religious development he showed less change in his feelings than his opinions, and at the early age of 16 he was so confirmed in religious convictions as to preach publicly in his native village at the little Baptist meeting house built by his father. The fervor that made him so famous as the boy preacher did not leave him with his boyhood, and the change that gradually came over his mind, partly from his mental constitution and partly from association with Independents of antitrinitarian views, did not lessen his early attachment to the Christian ministry. He enjoyed several years of laborious and successful pastoral life at Newport, and after a short stay at Norton he was installed as pastor of the Gravel Pit chapel, Hackney, July 7, 1805, where he continued until his death. Mr. Aspland stood for years at the head of the more active and pastoral portion of the Unitarian clergy of England. In 1806 he established a religious magazine, the "Monthly Repository," and took the lead in founding the Unitarian fund society for the support of popular preaching and the relief of indigent ministers. In 1815 he established the "Christian Reformer," a monthly magazine of considerable influence, which, since his death, has been conducted by his son, the Rev. R. Brook Aspland of Dukinfield. The Nem. Con. club, which embraced leaders of civil and religious liberty, of various opinions, was formed at his house in 1817, and in this and other ways he labored for the repeal of intolerant laws and the triumph of free principles. He was appointed by his brethren of the Presbyterian liberal clergy to read an address on their part at court on Victoria's accession, and on public occasions; he was the leader of his denomination. The list of his publications numbers 50, and since his death a volume of sermons and several pamphlets from his pen have been edited by his son. His style is clear and forcible, his spirit is kindly and fervent, his learning ample without being rare, and the whole impression given by his works is

eminently creditable to his zeal and humanity. He is an excellent specimen of an honest, clear-headed Englishman, trained up under the metaphysics of Locke and the liberty of Milton, and exhibiting under his perhaps somewhat limited philosophical intuition, a love of truth and right that must commend his name to the regard of many who do not share his theological opinions. The memoir of his life, works, and correspondence was written carefully by his son, and published in a handsome octavo in London, by Whitfield, in 1850.

ASPRE, or ASPER, CONSTANTINE D', baron, Austrian field-marshal of Belgian origin, born at Brussels in 1789, died May 24, 1850. He was the son of the brave field-marshal Van Hoo-brouck, who lost his life at Wagram. He entered into the Austrian army as ensign in 1806, and took part in the campaigns against France. In 1815 he served in the army-corps which held Murat at bay in southern Italy. In 1825, as colonel, he served against the Neapolitan insurgents. In 1848 he was in garrison in Italy when the insurrection broke out. In putting down the revolted Italians and defeating the Sardinian army in 1849, he acted a part only second to that of Radetzky. After being created field-marshal for his services in these campaigns he died at Padua.

ASPREMONT-LINDEN, a noble family in Belgium, descended from Siegfried von Este, who came to France under Charles Martel (680), and was endowed with the county of Aspremont, near Metz. The family divided into 2 branches, Aspremont and Linden. Gobert III. founded the first; his grandson was made duke by St. Louis, 1295; his descendants obtained the privilege from the emperor Charles IV. (1344) of conferring patents of nobility and coining money. The Linden branch became extinct on the death of Count Charles Robert, 1819. The elder branch, which was raised to the rank of baron of the empire, 1610, and to that of count of the empire, 1676, is still in existence. I. VICOMTE D'ORTHE ASPREMONT, governor of Bayonne at the time of the bloody feast of St. Bartholomew. On being ordered by Charles IX. to put the Huguenots to death, he made answer that in Bayonne he could find many loyal subjects, but not one assassin—"My soldiers and I beg you to employ our arms and lives only for things that are possible, no matter how hazardous they may be." II. FRANÇOIS DE LA MOTHE-VILLEBERT, vicomte d', took service in the French army about the middle of the 17th century, was second only to Vauban as a military engineer. As commander of the left wing he gained the victory over the Spaniards at Eponilles, in Catalonia. He fortified Toulon and died there June 27, 1678. III. FERDINAND GOBERT, as imperial field-marshal, stormed Buda, 1686, and served against the Turks in the 4 following campaigns. IV. FERDINAND KARL, born 1689, also passed his life in the Austrian service. He became master of the ordnance, and did good service in the 7 years' war. He died at Vienna, 1772, as imperial field-marshal.

ASPROPOTAMO, the largest river of Greece, rises in Albania, and after a S. S. W. course of 100 miles falls into the Mediterranean sea, near Missolonghi. At Korakos there is a bridge over it 180 feet in length. Aspropotamo signifies the "White river." It was anciently called the Achelous.

ASPULL, George, remarkable for the early development of his musical talents, was born in England about the year 1818, and died Aug. 20, 1882. At the age of 5 he began to give proofs of an extraordinary taste for music, which his father, himself a musician, lost no time in gratifying. In 2 years the child had learned to master the most difficult piano-forte compositions, which he read with great rapidity, and had cultivated with success every style of music, including the concertos of Handel and the fugues of Bach and Scarlatti. He was listened to with astonishment by musicians and amateurs, who could only compare him with Mozart at the same age, and on several occasions played before the royal family at Windsor. As is too frequently the case where the intellect is prematurely developed and the brain overtaxed, his physical powers soon gave out, and he died at the early age of 14.

ASS (*equus asinus*), the humblest member of the horse family, probably that first brought into subjection to man, the most patient, sure-footed, and enduring, and, it must be added, the worst cared for and most cruelly treated of its race.—The horse family, of which the ass ranks as the lowest member, after much discussion and dispute among authorities, has been thus classified. It is of the division *vertebrata*, having a back-bone; the class *mammalia*, giving suck; the tribe *ungulata*, having hoofs; the order *pachydermata*, thick-skinned; the family *solipeda*, uncleft-hoofed; the genus *equus*, the horse.—The principal distinction of the family is the uncleft-hoofed, and this distinction, it may be remarked, has been observed, and has prevailed, not only among naturalists, but generally wherever the animal has been introduced among men not previously acquainted with him, from the earliest periods of recorded history to the present times, as is rendered evident by the names given to him, in countries the most remote and times the furthest removed, by those who have had him introduced as a novelty to their acquaintance. Thus solid-hoofed, or, more correctly, single-hoofed, *μονόρυχος*, is the constant Homeric epithet for horses, at a time when the fable of the centaurs, who are described as scarcely extinct at the date of the events which the poet describes, proves the recent use and knowledge of the animals; and again, solid-hoofed, *pa-bai-ehi-ga-gau-zi*, is the name in the Algonquin dialect, given by the northern Indians of this continent to the horse, when he was first brought to their notice by the white settlers of the Canadas—certainly without any collusion with Homer, or knowledge that the same peculiarity had gained this name for the same ani-

mal, among the most polished people of antiquity, to whom he was also brought from beyond the sea; as is shown by the fable of his production in the acropolis of Athens, starting from the earth at the touch of Neptune's trident.—The various members of the equine genus, whose generic distinction is the undivided hoof, are as follows:

<i>Equus caballus</i> , the horse.	
<i>Equus hemionus</i> , of Pallas, the dziggtai, Asiatic.	
<i>Equus asinus</i> , the zebra.	
<i>Equus burchelli</i> , unnamed in English.	} South Africa.
<i>Equus quagga</i> , the quagga.	
<i>Equus asinus</i> , the ass.	

Of these 6 varieties, 2 only, the first and the last, are domesticated; and of neither of these, so far as it is known, are any to be found in a state of nature, except such as have, themselves, or their progenitors a few generations ago only, escaped from servitude, and increased and multiplied in particular places. Even this, however, has occurred with the true horse, far more frequently than it has with the ass; of which, in fact, it is doubtful whether the present wild ass is or is not the progenitor.—Of the horse, the native land is not distinctly known, although it is known *not* to have been Arabia, nor even, as some have surmised, Egypt, in which country it is first historically recorded as having existed. The probabilities are, on the whole, in favor of an inland African, Abyssinian, or Nubian origin of this noble animal; from one of which countries he was first introduced into Egypt, and thence into all other lands; Arabia, in which he has attained his greatest fame, and excellence of blood, being about the last land of the old world in which he became indigenous. The ass, on the contrary, is known to have been of eastern descent. He is first mentioned in Genesis xii. 8, in the history of Abraham, who, when he went down to Egypt on account of the famine in Palestine, found that king Pharaoh, who took to himself Sarai, Abraham's wife, believing her to be his sister, was possessed of "sheep and oxen, and he-asses, and man-servants, and maid-servants, and she-asses, and camels." And from that time forward, the mention of asses as beasts of burden, supplying the place of the horse under the saddle, is constant and uninterrupted to the end of the sacred history, while the horse is never once spoken of, until after several generations, when Joseph, the great-grandson of Abraham, gave to the Egyptians corn, in the years of the famine, "in exchange for horses, and for the flocks, and for the cattle of the herds, and for the asses."—That they were known in Egypt prior to this famine, appears, however, certain, since chariots are often spoken of before this, which are not adapted to, and are not known ever to have been drawn by asses; but it is nearly equally certain, that they were not known either to the Egyptians, or to the Jews, at the date of Abraham's first visit to the banks of the Nile, when asses were in common use.—At that time, probably, as was the case during all the historic ages of Greece, a

species of ass was wild on the mountains of Syria, Asia Minor, and throughout Persia; and in the latter country and Armenia, in the almost unexplored regions about the sources of the Tigris and the Euphrates, and the shores of Lake Van, it exists in a state of nature to the present day. They are mentioned by Xenophon, in his expedition of Cyrus, as occurring in great numbers in the desert, aromatic plains, through which the army passed, having the Euphrates on its right hand, while marching from Thapsacus in Syria toward Babylon. These plains he calls Arabia, although they lie in what is generally known as Mesopotamia. These animals, which he simply terms wild asses, *ovoi ayyoi*, of which words the specific Latin name *onager* is merely a corruption, were in company with ostriches, antelopes, and bustards; they were eagerly pursued by the horsemen of the army, and are described as being possessed of extraordinary speed and endurance. The wild asses of the same country, to the latest times, are possessed of the same characteristics. They have always been the especial quarry of the Persian monarchs, and the famous tyrant Nadir Shah was indefatigable in his pursuit of them, and considered the running down of one with his greyhound a feat equal to the winning of a battle or conquering a province. So great was their fleetness, their wind, and the power of maintaining their speed over immense distances, that, unless three relays of fresh dogs could be let slip on them, without a respite, and unless the hunters could get 2 or 3 remounts, there was no chance of their being run to bay, or of the pursuer, mounted on his best Turk or Arab courser, seeing the bay, if they were. Their flesh was considered the most exquisite of venison. Whether this wild ass is or is not the progenitor of our poor, patient drudge, is uncertain; but the probabilities lie against the identity, although the Parisian savants and gourmands of the day are busily crying up the excellence of ass-meat. Speed, however, is a quality which does not degenerate, but, on the contrary, increases, by domestication; as is proved by the fact, that the tamed horse invariably runs down and overtakes his wild congener, even with the disadvantage of carrying the weight of a man on his back. The wild ass of Xenophon, and that, probably identical with it, hunted by the shahs of Persia, is—it may be presumed—the *dziggai*, or *equus hemionus* of Pallas, which, as its specific name, *hemionus*, half-ass, indicates, possesses as much of the horse as of the ass in its character and qualities; and if such, having a distinct specification, cannot be the original stock of the domestic animal, although, of course, like all the horses, capable of interbreeding with it.—To return, however, to the domesticated ass of history, and of modern agricultural and commercial use. The best breed of asses, as might naturally be expected, comes from the East, where he has been long carefully cultivated, having been in use as the saddle animal of patriarchs,

kings, and judges, since almost the earliest period of recorded history. The rocky nature of the soil, and mountainous face of the country, in Judea and Palestine, favored the employment of this hard-hoofed, sure-footed, patient and enduring animal, as much as it discouraged that of the delicate, fine-limbed, high-bred courser of Syria and Arabia; in addition to which, Moses is stated to have forbidden the use of the horse to the Israelites, in consequence of his unsuitability to the country; and it is certain, that while the Jews were pre-eminently a martial people, their hosts, unlike those of the other oriental nations, which were decidedly equestrian, had their force and dependence in their infantry. Their princes and rulers, especially, rode on asses, as is proved by many passages of Scripture. Jair of Gilead had 30 sons who rode upon as many asses, and commanded in 30 cities; Abdon, one of the judges of Israel, had 40 sons and 30 grandsons, who rode on 70 asses; and lastly Deborah, in her song, apostrophizes the great and powerful of the land by the significant phrase, "Ye that ride on white asses."—In connection with this fact, it is worthy of remark, that Lieut. Col. Smith, who has devoted much attention to the equine families of the East, found near Bassorah, very recently, a breed of white asses, remarkable for their excellence, which, he had reason to believe, are of a breed as ancient as the time of the kings of Judah.—The characteristics of the ass, as distinguishing him from the horse, are: 1, inferiority in size; although doubtless this, in European countries, is in great part the consequence of centuries of cruel treatment, scanty fare, and want of attention in breeding; the animal having been for ages regarded only as the degraded drudge of the poorest of the poor; 2, a rougher and more shaggy coat, capable, however, of much improvement by warm keeping and a little grooming; 3, the shortness and stiffness of his postern joints, and the hard solidity of his sound upright hoofs, which seem almost incapable of lameness, and render him the safest and most sure-footed of animals in difficult mountain passes; a lame or a stumbling ass is a thing so rare as to be almost unknown; 4, the extraordinary length of his ears, resembling those of the hare, in a greater degree, than those of his own race, and the peculiar cross which he bears on his back, formed by a longitudinal dark stripe along the course of the spine, and a transverse bar across the shoulders. This singular mark is ascribed by superstition to the influence of the fact of his having been the animal on which the Saviour made his triumphal entry into Jerusalem—not, as some Christian commentators have strangely supposed, riding as an evidence of humility on a despised beast of burden, but mounted on the peculiar animal used from immemorial time by the kings of the Jews. It, however, only indicates his family connection with the wild members of his race, the zebra and quagga, who are yet more conspicuously striped, and of

whose character and disposition the ass possesses many points. The usual color of the ass is gray, mouse-colored, or black, and as they tend to bay, dun, or chestnut, the horse colors, their quality deteriorates. The dental system of the ass assimilates to that of the horse, and in like manner indicates the age of the animal, by the changes and marks of the teeth. The male ass is a perfect adult, capable of propagation, at 2 years; the female somewhat earlier; the latter carries her foal 11 months, producing it in the beginning of the 12th. The sexual potency and vigor, in both sexes, are excessive; which may explain the fact that in the hybrids of the ass and horse, the offspring are much nearer as well in organization as in temper and appearance, to the former than to the latter progenitor. In all cases, the mule is an ass, modified by a strain of the horse; not a horse, modified by a cross with the ass. The hybrid foal of the male ass and the mare is the true mule; that of the stallion and the she-ass, the hinny—the latter being less strongly tintured with the blood, and having less of the form of the ass, owing to the superior influence of the male in the physical form and external organization of the progeny.—The mule, like the ass, brays, owing to a peculiar construction of the larynx; while the hinny neighs, like its sire. There is no doubt but that with careful breeding, grooming, stabling, and nutritious feeding, the ass might be improved, at least as much as any other domestic animal, and probably in a greater degree. As it is, he is admirably adapted for a beast of burden, in cold, mountainous countries, in which, on a quarter of the food on which a horse would starve, he will safely carry burdens under which the more generous animal would break down, over places in which the other could not keep its footing. The character of the ass has been grossly belied, as obdurate, stubborn, and indocile; whereas, under kind treatment, he is hardly inferior in those respects to the horse or the dog. The female is excessively fond of her young; and both sexes are susceptible of strong attachment to their owners, unless alienated by cruelty and brutal treatment. In elevated countries, where the soil is light, asses are serviceable in an agricultural point of view; although in the United States, to which they were first introduced by Gen. Washington, they are little used except for the propagation of mules, which are in considerable and increasing demand, particularly in the southern states—Tennessee and Kentucky being the largest producers of these valuable animals. The best asses are obtained either from Smyrna, of the Asiatic breed, or from Spain, where the race has been particularly cultivated, as it has, also, in Peru, with a view to the business of mule-raising, which in both these countries is an important branch of agriculture.—It is little probable that the prejudice against the ass will ever so far subside, as to lead to any pains being taken, during successive generations, to elevate him to the rank from which he has de-

clined; but if such were the case, it can hardly be doubted that, beside solving a curious question of natural history, the experiment would be crowned with success.

ASSAL, a salt lake of eastern Africa, lying S. W. of Tajoorra. It is of an oval form and about 32 miles in circumference. It is said to be over 700 feet below the level of the sea. Its shores are coated with a saline incrustation which in many places is more than 6 inches in thickness. The traders of Abyssinia resort thither in large numbers for the sake of its salt.

ASSALINI, PIETRO, an Italian physician, born at Modena, in 1765, died in 1840, distinguished his self-sacrificing efforts and his publications, in connection with medical and surgical science. He joined the French army under Napoleon, in the campaign against Egypt, but he went only as far as Jaffa, to attend to the victims of the plague, which desolated that city. On this trying occasion he displayed the greatest courage, and in his *Observations sur la peste*, suggested to him by his experience at Jaffa, he discards all fear of infection on the part of the physician attending upon cases of the plague, provided he does not stay too long in the sick room, and takes plenty of exercise in the free air after leaving it. At Cadiz he had opportunity to study many cases of yellow fever, and he reported with great accuracy his experiences in all such cases, and also in many cases of dysentery and other diseases which afflicted the army, and the countries, as Sicily and Calabria, through which he happened to pass. He also occupied himself with the study of maladies of the eye, and the Cesarean operation, and other operations connected with accouchements. The books which he published on these various subjects were received with great favor by the academies of medical science and the profession generally. Napoleon appointed him first surgeon of the court, and surgeon in ordinary of the viceroy. After the Russian campaign he practised his profession at Milan, where he presided over the institution for midwives and orphans, beside attending to his duties as chief surgeon of the hospital of St. Ambrosia, and filling a chair at the medical college of Milan.

ASSAM, or ASAM, a kingdom in further India, bounded on the N. by Thibet, on the E. by China, on the S. by Burmah, and on the W. by Bengal. It was part of the Burman empire, but circumstances led to the interposition of the British in 1825, who took the kingdom under their protection. The country abounds in all the richest productions of the east, the precious metals, cereals, spices, silk, the costly works, and all the choicest products of both temperate and tropical climates. Recently the tea plant has been cultivated with some success, although the preliminary difficulties attendant on the introduction of the shrub have kept up an artificial price. The fertility of the soil is dependent on the annual inundations of the rivers, of which the Bramapootra is the largest.

The inhabitants are worshippers of Brama, and Bengalee is very generally spoken; their numbers are insufficient to bring out the capabilities of the country, while the inertness which their bounteous climate favors, prevents manufacturing industry. The population does not exceed 200,000.

ASSAS, NIOOLAS, chevalier d', a French officer of the end of the 18th century, whose name has been handed down to posterity, on account of a single act of self-sacrifice, which caused his death. It happened during a fight near Geldern, Oct. 15, 1760. Assas had the command of the night watch, and while he went a little in advance of his men to see whether all was right, he found himself of a sudden surrounded by a band of soldiers of the hostile camp, who threatened to shoot him, if he should betray their presence. The safety of the army depended on his conduct. Without hesitating he shouted for his soldiers at the highest pitch of his stentor voice. The soldiers came on. The enemy's plan was frustrated, but before even the sound of his voice had fully expired, Assas had ceased to live. The French government conferred an annual pension of a thousand francs upon his family.

ASSASSIN, a word introduced by the crusaders into the western European language. It originated from being given to the disciples and followers of the then celebrated "old man of the mountain." Bound to him by fearful oaths, in their terrible and bloody fanaticism they murdered unhesitatingly—reckless of dangers and death—whoever was pointed out to them by their arbitrary chief. He was called Hashishin, this name being derived from Hashishet, an opiate now known as *hashish*, used by the chief to bring his followers into a state of murderous frenzy. The use of this opiate was introduced among the Arabs and Mohammedans by a contemporary of Mohammed, a sage named Inder-Baba-Reten, a great botanist, and, as some Mohammedans maintain, a founder of the der-vises.

ASSAULT, in law, is usually but not necessarily accompanied by battery. The assault need not be accompanied by blows. A demonstration of violence, a blow or a stone which misses its aim, is an assault; a battery implies actual contact either with an instrument or missile. Assaults are felonious or common assaults. They may be made either the subject of a prosecution or of a civil action. A felonious assault is an assault with an instrument calculated to produce death, such as knives, swords, guns, and so forth; or it is an assault with intent to commit some worse offence, in itself a felony, such as rape; a common assault is a battery with the fists or sticks and stones. The consequences are widely different. The common assault being esteemed a light offence, a misdemeanor (literally ill-behavior), so that a man who batters his wife within an ace of her life, with a poker, or bites off an opponent's nose or ear, is only deficient in polite and orderly

conduct, and is either fined or sent to prison for a few weeks, while a scratch with a pen-knife might subject the offender to years of prison discipline. The police reports of every day in the year display this remarkable inconsistency in the law of assault. The statute law of England establishes some distinction in the quality of the persons assaulted. Magistrates, policemen, and certain other persons, are additionally protected.

ASSAULT, in military affairs. See ATTACK.

ASSAYING (Fr. *essayer*, to try). This term, applied always to metallic compounds, is variously used, sometimes in the sense of analysis, which means the separation and estimation of all the ingredients; sometimes to signify the determination of the quantity of gold or silver in any alloy with other metals, and sometimes to signify the separation of the principal metals in any ore. The first use of the word is incorrect; the second is the oldest and commonly received signification, still in use among workers in gold and silver; and the third is the use of the word among metallurgists, and is generally limited by them to separations made in the dry way, that is, by the crucible. By the French chemists it is not limited to this application alone, for the ablest treatises on the subject are the *Essais par la voie seche* and the *Essais par la voie humide*, of Berthier. A general view of the subject can be given by treating it as applied to gold and silver alone; and some special methods of assaying a few ores of other metals may be added. The process of separating gold and silver from other metals with which they are alloyed depends on this principle, that they cannot be converted into oxides by combining with the oxygen of the air, while the other metals they are generally alloyed with can be oxidized at a high temperature. The first object, then, is to melt the alloy, and while it is in fusion cause the baser metals to be oxidized. The process by which this is effected is called cupellation. It is applied in economical operations on a large scale, as well as in the laboratory process.—The apparatus consists of a small wind-furnace, a muffle, and little cups, or cupels, made of burnt bones ground to powder and moulded together with water. The muffle is a flat-bottomed earthen vessel, 8 or 10 inches long, 8 or 4 wide, and 2½ or 3 inches high, its top arched over, one end open, the other close. In its roof and sides are little apertures through which air drawn in at its open end can pass. It is set in the furnace, in the side of which is an opening corresponding to the open end of the muffle. Coals are heaped around and upon it to expose it to the full heat of the furnace. The cupels should be prepared of bone-ashes, well burnt, ground, and washed, and then shaped into cylindrical forms, an inch or so high and 2 inches in diameter, their tops having a shallow depression to hold the metal. These cupels have the property of absorbing the oxides of the metals and holding those that will not oxidize; but as they cannot absorb a great-

er weight than their own of the oxide of lead, or litharge, not quite so much of this metal should be put into any one as its own weight. A piece of silver to be assayed for determining its purity is carefully weighed in a delicate balance. It may be from 80 to 40 grains, or even less, if already considerably alloyed. A proper quantity of lead, known to contain no silver, is put with it, and the two are placed, by means of small tongs, in the cupel, which, with the muffle, has been brought to a full red heat in the furnace. It is convenient to carry on several of these operations at once, and therefore a number of the cupels are usually introduced together on the floor of the muffle. The metals immediately melt and form a bright globule, which boils and spins around, and keeps in continual motion. The air drawing in through the muffle oxidizes its surface, and fumes of the oxide of lead are carried off by the draft. At the same time a floating scum of the oxide is constantly flowing down the sides of the globule and sinking into the cupel, while freshly formed oxide replaces it. Any copper that is present is oxidized with the lead and absorbed into the cupel. Thus the operation goes on till it terminates by all the lead being oxidized, which is indicated by a sudden brightening up of the little globule, and the cessation of the appearance of the fumes and scum of oxide. This little globule, which is pure silver, shows by its diminished weight the quantity of alloy that was in the sample. Care should be taken to avoid too intense heat, as this may volatilize a portion of the silver; and the globule should not be cooled suddenly, as the pure metal absorbs oxygen when melted, and gives it out in cooling. If the change is sudden some silver is apt to be ejected with the gas. By a little experience and care this operation is made so perfect that no sensible difference should be detected in the weight of two buttons obtained from two assays of equal weights, when tested by a balance that turns with $\frac{1}{1000}$ of a grain. The quantity of lead that should be added is a matter that can only be determined by experience. Too little lead for the silver prevents the formation of a clean button, free of oxide, and too much lead is apt to carry down with it into the cupel a small quantity of silver. This operation is often performed with the blowpipe, and small cupels adapted to its uses. The weight of the little button is ascertained by the size of the round hole, of a graduated series of such holes in a brass plate which it fits, the weight of a button of silver or one of gold for each hole having been previously ascertained. In skilful hands this is conducted very expeditiously, and with considerable accuracy. It is especially adapted to the testing of argentiferous lead ores, to determine approximately their percentage in silver. The lead also may be quantitatively determined by the reducing process with the blowpipe, that must precede the cupelling. M. Gay Lussac has introduced into the French mint and other establishments in Paris, a simple method of de-

termining the quantity of silver by precipitating it from its solution in nitric acid. This is done by a solution of salt of known strength, which is dropped from a graduated vessel into the silver solution as long as the cloudy precipitate of chloride of silver continues to be formed. The process is very similar to that of determining the strength of an acid solution by the quantity of alkali employed to neutralize it. The weight of the material used to produce a certain effect is employed for calculating the quantity of the substance operated upon.—If gold alloyed with copper is to be assayed, some silver must be added to the alloy, for copper alone with gold is not easily separated from it. The alloy of the three metals may be cupelled; the copper is oxidized in the process, and the gold and silver remain together. The alloy of these metals is separated by the process called parting, or quartation, as it is usually conducted upon an alloy made to contain at least 3 parts of silver to 1 of gold. If the silver is in larger proportion, it is no matter, but when of small amount compared with the gold, it is shielded by the gold from the action of the dilute nitric acid, which is used to dissolve out the silver. To insure a perfect union of the gold and silver added to it, it is well to melt them with lead, and then separate the lead by cupelling. More heat may be safely applied than when silver is cupelled without gold, as the alloy of these cannot waste by volatilization. The button is hammered out, heated red hot, and annealed, and then rolled into a thin plate, which is coiled up, of the size of a quill, and called a cornet. This is put into a parting-glass, and 2 or 3 times its weight of pure nitric acid is poured upon it. Some heat is applied, when red fumes of nitrous acid gas are given off, and in a short time the silver is dissolved, and the gold is left, still retaining the form of the coil, but a brittle, spongy, brown mass. The solution of silver is poured off, and a strong acid is added to the gold, and heated to dissolve out the last traces of silver. This is poured off, and the gold is washed with hot distilled water. It is carefully taken out, put in a crucible, and heated, when it shrinks together, regains its metallic lustre, and the fine color of gold, with its softness and flexibility. Being now weighed, the process is finished by the calculation of the quantity lost. The silver is recovered by precipitating it from the solution by the introduction of bright sheets of copper, for which metal the acid has a greater affinity than for the silver. It is ascertained that in this process the silver is never entirely taken up by the nitric acid, and that some gold is dissolved by the strong acid, as is found by preserving for years the same acid to extract the last traces of silver. The inside of the bottle containing it becomes at last coated with fine gold. This has been noticed in the British mint, and full 30 grains of gold have been collected from bottles thus used. Very small errors are thus involved in estimating the quantities of silver and gold

by this process.—The assaying of iron ores is based upon the same principles as the reducing them in the blast-furnace. The oxygen, with which the metal is combined, must be taken up by presenting to it some substance for which it has stronger attractions than for iron, and the earthy impurities must have such substances added to them, that the product of their union will be a glassy fluid, through which the globules of metallic iron can easily sink and collect together in a button. Charcoal is the substance for deoxidizing the ore in the blast-furnace, and in the crucible. The matters for aiding the fusion, called the flux, vary according to the earthy ingredients of the ore. The desired glassy fluid is a silicate of lime and alumina, and it may be of magnesia. If the ores already contain much silica, carbonate of lime, either pure or the magnesian carbonate, with the addition of some alumina, or common clay, constitutes the proper flux. Ores deficient in silica require an addition of it. Some ores contain such a mixture of proper fluxing ingredients, that they melt easily without any addition of these matters. In the crucible, a little borax increases very much the fusibility of the mixture. The ore and fluxes should be thoroughly ground and mixed together, and placed in a brazen crucible, *i. e.* one carefully filled and rammed with fine charcoal, moistened with water to a paste, and out of the top of which a cavity is excavated for holding the assay sample. The crucible is to be placed in a wind-furnace, gradually heated for half an hour, when the whole force of the blast is to be applied for half an hour longer.—The assaying of copper ores, as conducted by metallurgists, is often an empirical process, the fluxes being added with very vague ideas as to their true effect. The ores are properly classified into those which contain no sulphur, arsenic, or any foreign metals but iron; those which contain sulphur, iron, arsenic, antimony, &c. Ores of the first class, containing over 3 per cent. of copper, are reduced in a crucible by the addition of 3 parts of black flux. Poorer ores must be assayed in the wet way. The second class are sulphates, or sulphurets. The former are easily decomposed by heat in a platinum crucible, when they may be treated as substances of the first class. The sulphurets, under which general head are included most of the workable ores of commerce, are treated in a great variety of ways. The first operation, after reducing them to fine powder, is to roast or calcine them, to expel the sulphur. This process requires care and experience, and is most thoroughly effected, according to Mitchell, by adding one-tenth of their weight of carbonate of ammonia to the roasting mass in the crucible, constantly stirring it in as the calcining goes on. The ammoniacal and sulphurous vapors having a strong affinity for each other, the whole of the sulphur is extracted. The ore is then thoroughly mixed in a mortar with 25 per cent. of its original weight of lime, and 10 to

20 per cent. of fine charcoal, and $1\frac{1}{2}$ time its weight of dry carbonate of soda. The whole is to be placed in the same crucible in which the roasting was done, and covered with its weight of glass of borax. It is then subjected to a moderate heat for a quarter of an hour, and to a bright red heat as much longer. On cooling, and breaking the crucible, the button of copper will be found in the bottom. It is well to make two parallel assays of these ores, that one may confirm or disprove the other.—The common varieties of lead ores subjected to assay are the sulphurets (galena) and the carbonates. The former is treated by taking 400 or 500 grains, coarsely powdered, and mixing with it one-fourth its weight of black flux, one-fourth of iron filings, in small pieces, and one-eighth of cream of tartar. The crucible should be large enough to contain double the quantity, and the charge should be covered with common salt half an inch deep. After being exposed to a high heat for 10 minutes, the lead may be poured out, or suffered to cool in the crucible. If the ore contain much earthy or pyritous matter, a less proportion of iron filings should be used, and a little fluor-spar and borax be added. Galena is conveniently assayed in an iron crucible, the crucible itself furnishing the material for desulphurizing the ore. The usual quantity, say 400 or 500 grains, is mixed with $2\frac{1}{2}$ times its weight of carb. soda, and put in an iron crucible, which is covered. The galena is decomposed, and sulphuret of iron formed. The lead is poured out into an ingot mould, and the crucible well tapped to obtain all the lead. Another sample is immediately put in while the crucible is hot, and the operation repeated as long as the crucible lasts. It will last longer by being equally heated on all sides. The carbonates are assayed with half their weight of black flux, and a little cream of tartar, with a superficial covering of salt.

ASSELYN, JAN, a distinguished Flemish landscape painter, born at Antwerp in 1610, and died in 1660 at Amsterdam. He studied under Jan Miel and Esaias Vandervelde at Antwerp, and under Peter de Laer (Bamboccio) at Rome. In his landscapes taken from the vicinity of Rome, which are enriched with ruins of edifices, and decorated with figures and cattle in the style of Berghem, he imitates the manner of Claude Lorraine. His touch is bold, his coloring bright, his skies warm, and his figures well drawn and skilfully disposed. He also painted battle pieces of considerable merit. He was surnamed *Crabbetjys* (little crab, crab-like) by the Flemish artists at Rome, on account of a contraction in his fingers.

ASSEMANNI, the name of a Christian Syrian family, several members of which distinguished themselves by their knowledge of the oriental literature. The first and most learned among them was JOSEPH SIMON, born at Tripoli in 1687, died at Rome in 1768. He was educated at Rome, took orders, was sent by the pope to visit the libraries of the monasteries in Syria

and Egypt, whence he brought back to the Vatican many valuable works. He was created bishop and regent of the library of the Vatican, and began a publication of the oriental manuscripts found there. He thus contributed more than any one else to make the Syrian literature known to Europe. His nephews, STEPHEN EVODIUS and ALOYSIUS, or JOSEPH LOUIS, both came young from Syria to Rome, received there a clerical education, and in the course of the 18th century distinguished themselves as orientlists, bibliophiles, and authors of various works, including catalogues of celebrated Roman and Florentine public and private libraries. Finally, one of the name known as the Abbot SIMON, a learned Maronite, was professor of Oriental languages at the university of Padua, where he died in 1821.

ASSEMBLY. This is a term introduced from the French (*assemblée*), and is employed to designate meetings or gatherings of persons for a variety of purposes. I. Socially. We apply the term assembly to gatherings for conviviality or amusement, and also to informal meetings of the community, or any particular class of it, for literary or religious conversation or discussion. Such assemblies have no powers not enjoyed by private citizens; they are only aggregations of individuals for concert of thought or action. Every such assembly has its rules, either expressed or understood, for self-regulation, but they have no action or existence beyond the assembly itself. II. Politically. The word assembly designates certain bodies of men associated for civil purposes, and possessed of more or less political power, such as the Roman assembly, the *assemblées du champs de Mars*. These associations may be from the people, and so be democratic to a greater or less degree, or they may be convoked by the mandate of a king, and so be aristocratic or monarchical. Such an assembly is always possessed of more or less power to make its deliberations or enactments rules of conduct for itself, or those whom it represents, beyond the pale and time of the assembly itself. It is also either within the scope of the political constitution or charter under which its members reside, and is therefore constitutional; or, it arrogates to itself powers not recognized by those documents, and is revolutionary. In the latter class may be mentioned the French national assembly of 1789, which, by a stroke of revolutionary policy, absorbed into itself the powers exercised by the 3 orders under the then existing government of France. The term assembly, in some states of the Union, designates both branches of the legislature jointly. In others it designates the lower branch only, while in others still it is used with the prefix "general," with the same application. III. Ecclesiastically. The term assembly has been applied since about the time of Calvin to bodies of the clergy or laity, representative or otherwise, met to deliberate or act on matters pertaining to the doctrine or discipline of the

church. Such an assembly, under a government where the church and state are allied, has certain political or at least civil powers, and can associate the arm of the law to enforce its enactments; while in countries where church and state are not united, the assembly can only enforce its decisions in that province which the custom of the country has assigned to the jurisdiction of the church, and even then not to the detriment of any civil right of the individual. In Scotland and in this country, the word assembly has an ecclesiastical importance which deserves mention. Under the influence of Knox, the great religious reformer of Scotland, there grew up a very strong party in favor of the independence of the church; that is, its separation from all civil interference. To accomplish this, a representative convention of clergy and laity was held first in 1561, at which the plans of emancipation were of course but imperfectly matured. Through long and painful contests, sometimes disgraceful to both parties, the Presbyterian element at length attained in the memorable assembly of Glasgow (1638) the ascendancy it desired, abolished the episcopal hierarchy, and continued its sittings in the face of the royal mandate of adjournment. This may be regarded as the commencement of the general assembly of Scotland, considered as a deliberative and judicial body in the exercise of determinate and acknowledged functions. The triumph of the assembly was but temporary. In the protectorate, by the policy of Cromwell, the sittings of the assembly were forbidden, and the same prohibition, though on different grounds, was continued after the restoration, until William III., who restored the assembly and the 8 inferior judicatories of the Scottish church to the exercise of their functions, though without admitting their claims to an entire independence of the state authority. Ever since the revolution, the general assembly has nominally been adjourned from year to year by the royal commissioner, who sits in the assembly, but without any power even to vote in its deliberations. The commissioner proclaims in the name of the English crown, that the assembly will be reconvened on a stated day, while the ecclesiastical moderator of the assembly announces the adjournment to the same day in the name of the Lord Jesus, as "the only Head of the Church." The general assembly of Scotland is the highest of the 4 judicatories of the church. The other 3 are, the synod, the presbytery, and the kirk session. The general assembly is representative, legislative, and judicial in its powers. It is thus constituted: 80 presbyteries send 218 ministers and 94 elders; the city of Edinburgh sends 2 elders; 65 other royal burghs send one elder each; the 4 universities and Marischal college send each a representative, who may be either a minister or elder; and the church in India in connection with the church of Scotland sends 1 minister and 1 elder. The assembly thus admits of lay representation, and so differs essentially from

the convocation of the church of England. The assembly holds its sessions at Edinburgh in May, during 10 days, and all business not completed within that time is assigned to commissions which are empowered to hold meetings quarterly. The moderator of the assembly is by modern custom a clergyman, and preaches a sermon at the opening of the session. Final appeal in all parochial matters is had to the assembly from the inferior judicatories. On account of conceived encroachments on the independence of the church of Scotland by the crown, in 1843, at the annual meeting of the assembly a secession of the Non-Intrusionists, with Dr. Chalmers at its head, took place, and the Free Church of Scotland was organized, and constituted a general assembly on the same principles as the former establishment, though it is more generally designated as a synod. These must be distinguished from each other. Only one other remark deserves to be made here, to guard against mistake in reading various works on the ecclesiastical history of Scotland. The branch of the church of England, which, despite of the civil disadvantages to which it has been subjected in Scotland, has perpetuated itself in that country, and which to-day consists of a primate (archbishop) and 6 bishops, is denominated in all works written by church of England authors, "the Church of Scotland," and that which in this article has been designated as the church of Scotland, is called "the Scottish establishment," back to the revolution of 1688.—The term general assembly is used in the United States, as in Scotland, to designate the highest ecclesiastical court and legislature of the Presbyterian denomination of Christians. But while Presbyterianism as a religious doctrine, and in the leading principle of church government characterized by its name (Presbyterian), has the same symbol as Scotch Presbyterianism, the general assembly of American Presbyterianism essentially differs from that of the Scotch, from the consideration that the United States civil government recognizes no established religion, and puts no religious denomination in any connection with the State. The first general assembly of the American Presbyterian church was held in 1789, though the denomination had existed in this country since 1704, the first presbytery having been organized in that year. Previous to the holding of the general assembly, and about the middle of the last century (1741), the Presbyterian church was divided by a schism into 2 parties, one organizing (1745) under the name of the New York synod, while the other retained the name of the Philadelphia synod. The division was partly doctrinal, but more on account of the action of the synod concerning itinerant evangelists, and the necessity of a liberal education as the condition of a license to preach. The Tennent family, within the limits of the New Brunswick presbytery, were prominent in the schism of 1741. But the breach was at length healed, and in 1758 a proposition was

made for a reconsolidation, which was finally effected. In 1786, it was proposed to divide the synod, which since the reunion had been known as the New York and Philadelphia synod, into 4 synods, and then out of these 4 to form a general assembly, which plan was consummated in 1789; and on the third Thursday of May in that year the first general assembly of the Presbyterian church met in Philadelphia. This continued until the second division, which occurred on doctrinal grounds, into Old School Presbyterianism and New School Presbyterianism, since which time (1838) there have been 2 general assemblies, one for each of these branches of the church. In the last meeting of the New School general assembly, held in Cleveland, Ohio, in May, 1857, that body adopted a paper on the subject of slavery, with which a portion of its members were not pleased. These members therefore united in a protest against the action of the assembly, and issued a call for all who sympathized with them to meet at Washington, D. C., in the month of August following, for the purpose of organizing a third general assembly, in which the subject of slavery should not be introduced. The place of meeting was subsequently changed to Richmond, Va., where the question was discussed, and laid over for further action, at a future meeting to be held in Knoxville, Tennessee.

ASSENT, ROYAL, the form by which the English sovereign signifies approbation of a bill in parliament. The assent is either by the sovereign in person on the throne, or by commissioners appointed for that purpose. Supply bills are assented to in the commons, other bills in the lords. The form used is Norman French, *le roi le veut* to a common bill, *soit fait comme il est désiré* to a private bill. The assent is pronounced by the clerk of the parliament. The custom of using Norman French was abolished by the thoroughly English-hearted Cromwell, whose form was "the lord protector doth consent." But the restoration restored the French language with French influence; and although in 1781 it was enacted that all judicial proceedings should be in English, this form was left as an exception, possibly by accident. The royal assent is a form; the modern usages of parliament do not bring the question to the issue of an assent. The sovereign is presumed to accept the advice of ministers. Personally, the president of the United States is more powerful in the affairs of government than the sovereign of Great Britain. The last instance of refusal of royal assent was in 1707, by queen Anne, of a Scotch militia bill. An act of parliament takes effect from the date of the royal assent.

ASSER, or ASSERIUS MENEVENSIS, a learned monk of St. David's or Menevia, in Wales, died about 910. Asser was invited to the court of Alfred the Great, of Wessex. Upon the reputation of his learning, King Alfred first wished him to reside all the year round at his court, but Asser would not leave his monastery

altogether, so it was arranged that he should divide his time between his English and his Welsh residence. He read Latin with Alfred out of such few books as the king possessed, and corrected his translations. Alfred bestowed many ecclesiastical preferments upon Asser. Some authorities say he became bishop of Sherburn. Asser's great work is his "Life of Alfred," in Latin. The earliest edition is that of Archbishop Parker, at the end of Walsingham's "History," 1574. The best edition is that of Wise, Oxford, 1722, entitled *Annales rerum gestarum Alfradi Magni*. This is our chief authority for the events of Alfred's public and private life from his birth to 889, and conveys much incidental intelligence about the laws, manners, and general civilization of Wessex at that time. It should be said, however, that Thomas Wright, in the *Biographia Britannica Litteraria*, maintains that this life is one of those literary forgeries which were thought pardonable in those days, and that it was written at a later date, and Asser's name affixed to it. Drs. Pauli and Lingard, and J. M. Kemble, do not assent to this, and Mr. Wright remains as yet without a supporter. Bale and Pits give the titles of 5 other works ascribed in their day to Asser. They are not extant. His life, after his patron and pupil's death, is obscure.—ASSER, or more correctly ASH, is the principal author of the Babylonian Talmud. He was born at Babylon A. D. 853, and died 427. He was appointed head of the college of Sora at Babylon. His disciples numbered 2,400. This Talmud was as important a work to the Jews of the east for generations as Luther's translation of the Bible has been for the German Protestants since the reformation. The Jewish community have ever held him in peculiar honor.

ASSESSORS. I. In civil law, a professional adviser who sits beside unprofessional judges to advise them on taking the evidence, or the state of the law. In the Roman empire the provincial governor was generally a rude soldier who knew nothing of law, but yet was the high court of appeal. It was usual to supply his deficiencies by an assessor. A civilian often attends courts-martial for the same purpose. II. In England, in the election of municipal corporations, officers of this name are appointed to assist at the election, and ascertain the result. III. In America the assessors are men who are elected by the popular vote, to assess and appraise property for the purposes of taxation.

ASSETS, in law, from the Norman-French, *assets*, sufficient, is the generic term for the property of a person deceased. In this country the important legal distinctions known in European law, between real and personal property, are practically abolished, both for testamentary purposes, for devolution, and as a means for payment of creditors. The peculiar character of real estate was part of feudalism, and a necessary consequence of the system is

hereditary honors an estates. Until quite recent years, landed property in England, even when not entailed, was not applicable, in the hands of the heir, to the payment of debts. Now, however, the remedies against real estate are very materially extended, and this *opprobrium juris* in the law of debtor and creditor is removed. Assets are real or personal; they are also legal or equitable. Under the head of real estate is included all lands in possession, some interests in land, and some rights connected with land. Legal assets may be generally defined as property in possession; equitable, as rights to property. The executor or administrator is not deemed liable, by the law, for any other assets than those which have come to his hands, which qualification does not, of course, imply that they have come into his actual, but into his constructive possession or control. In the interpretation put on this, the courts generally favor the executor or administrator, unless he be acting *de son tort* (in his own wrong), that is, where a person has assumed the office without being duly constituted. The mode of collecting and applying assets will be more appropriately detailed under the head of EXECUTOR. The executors must exhaust personally in payment of debts in the order of assessed taxes, judgment debts, and decrees, according to priority of docket or emolument, recognizances, bonds, sealed instruments, notes, bills, and unliquidated demands and accounts. The personalty must be exhausted in payment of these, and then the real estate may be had recourse to.

ASSIENTO (Spanish for treaty), a term understood to have exclusive reference to the treaties made by Spain with foreign countries for the supply of negro slaves to her South American provinces. The Spanish government having no settlements on the African coast, encouraged adventurers to supply slaves by securing to them a monopoly of the supply with other commercial privileges. The Flemish merchants had the contract until 1598, afterward the Genoese until 1696, when the Portuguese took it. In 1702 a French company accepted the contract, the terms of which were the privilege of sending a ship of 500 tons, with merchandise free of duty to Spanish America, and the payment of a sum on each imported negro, the minimum number of slaves being fixed at 4,800 annually. In 1748 the contract which had been transferred to the South sea company, was abandoned at the peace of Aix la Chapelle. It never gave satisfaction to Spain; and the contractors always lost money by it; their local factors and agents reaping the profits, and making large fortunes.

ASSIGNAT, the name of the paper currency in France at the time of the revolution. The French government finding itself short of money in 1789, issued under the name of "assignat," paper-money to be redeemed by the value of the property of the clergy and the emigrants, which the government had seized, and

which was intended for sale. The assignats kept their value above 90 per cent. until 1793, but from that time they began to droop. The original issue of 1,200 million francs was increased to such an exorbitant amount, that the markets became glutted with assignats. Robespierre and others made great efforts to prop the market; but it was all in vain. They fell soon to 60 per cent., and in 1795 they could be had at 18 per cent. Thomas Carlyle in his "French Revolution" (vol. ii., p. 449), says, in reference to the calamity produced by the emission of the assignats:—"There is, so to speak, no trade whatever for the time being. Assignats, assignats, long sinking, emitted in such quantities, sink now with an alacrity beyond parallel. 'Combien,' said one to a hackney-coachman, 'what fare?' 'Six thousand livres,' answered he: some 800 pounds sterling in paper-money. On the 1st of Feb. 1796, at the Bourse of Paris, the gold louis of 20 francs in silver costed 5,380 francs in assignats. Pressure of maximum withdrawn, the things it compressed likewise withdrew. 'Two ounces of bread per day' is the modicum allotted; wide-waving, doleful are the bakers' queues; farmers' houses are become pawnbrokers' shops." The assignats gradually dwindled down to nothing, involving the whole land in ruin,—excepting a few lucky speculators,—and resulted eventually in national bankruptcy.

ASSIGNATION, a Russian paper-money, introduced early in the reign of Catharine II., about the year 1770, principally to carry on the wars against the Turks. The standard currency was then as now the silver ruble, and the paper assignations on the banks—likewise founded by Catharine—were to represent in full the standard silver coin. But they soon fell until the assignation-ruble was worth only one-half, one-third, and finally one-fourth of the original value; and thus it became necessary to specify the nature of the ruble in all transactions. From 1787 the use of assignations as currency was general in all money affairs, both public and private. Paul I., enraged because the merchants of St. Petersburg, foreign and domestic, refused to receive assignations at the government standard in payment, threatened that he would erect a gallows on the exchange for their special benefit. Stringent ukases for facilitating the circulation of assignations all over the empire proved wholly unsuccessful, and at the death of Paul, and during the greater part of the reign of Alexander I., the assignation-ruble was generally worth one-fourth of the silver. During the wars against Napoleon the issue of assignations increased excessively, but still no considerable additional depreciation took place. With peace and increasing prosperity the assignations rose, and finally the government fixed the standard at 3 rubles, 60 copecks, either of copper or assignations, for a silver ruble, one assignation-ruble equalling 100 copecks copper, and four copecks copper making one of silver. On account of the facility of carrying in paper the

large amounts of money required for the internal trade, in a country where almost all operations are for cash—the assignations soon came into such demand as to be worth a premium over the standard. This premium naturally increased the further you went into the country. Thus assignations were dearer in Moscow than in St. Petersburg, and still dearer in Kasan, or Astrachan. These fluctuations were so irregular and inconvenient that, in 1839, a ukase regulated the value of the assignations at 3½ to 1 silver, and ordered that henceforth the silver ruble should be the legal unit in all negotiations and legal documents, that a new paper-money, called "bills of credit," should be issued, and the old assignations gradually withdrawn from circulation and destroyed. This was accomplished, and the name, the use, and the existence of assignations belong now altogether to history.

ASSIGNEE, in law, the party to whom property has been assigned or made over. It has also various technical significations; the assignee of a bankrupt or insolvent, is the party in whom the legal interest in all the property is vested to be applied in payment of debts, answerable to the *agents de faillite*. Formerly assignees were exclusively appointed by the creditors, but this having led to some abuses, less of malversation than of neglect, official assignees have lately been appointed both in England and France (*syndique provisoire*).

ASSIGNMENT, in law, the making over or transferring of any species of property. It also signifies the deed or instrument by which the transfer is operated. The assignment of a lease is the transfer of the assignor's whole estate in the term created by the original lease. The difference between an assignment and an underlease is that the underlease retains the reversion, whereas the assignment parts with it. Assignment in commercial law was formerly much restricted. Bills of lading, bills of exchange, were not assignable. All interests in personal property, of which a man had not the actual possession, but merely the right to recover, are choses in action. Thus a debt, whether speciality or simple contract, is a chose in action, a something to be recovered. These were not assignable. These restraints were, however, evaded by a license to use the name of the legal creditor. Even under a bill of sale of goods the property in them does not pass unless by actual delivery and possession as against *bona fide* creditors. Both by the English and French law, property in the power and disposition of a debtor may by process of law be transferred to his creditor.

ASSING, ROSA MARIA, a sister of Varnhagen von Ense, a German poetess, born in Düsseldorf, May 28, 1783, died Jan. 22, 1840. The outbreak of the French revolution obliged her family to take up their residence in Strasbourg, the native place of her mother; and in 1796 they removed to Hamburg. After the death of her father in 1799, she was burdened

with many cares, and began to employ her talents and education in teaching. In 1816 she married Dr. Assing, a physician of Königsberg, who removed to Hamburg; and their house, in which a generous hospitality prevailed, became a favorite place of reunion for the most esteemed literary persons of Germany. The poet Chamisso, the early friend of Rosa Maria and her brother, was a frequent visitor. She had early begun to express her inward experiences in poems and tales, but her friends could persuade her to publish only a few pieces. Her poems published with a memoir of her life under the title of *Rosa Maria's poetischer Nachlass*, Altona, 1841, give a full insight into the genius of this admirable lady.

ASSINIBOIN, a large river in N. America, which flows north and empties into Lake Winnipeg. It is formed by two branches, one of which, the Red river of the North, rises near the head of the Mississippi, and the other the Assiniboin proper. On the banks of this river the soil is arid and sandy, and the country is in possession of the north-west company, which has on its banks several trading stations and depots. The Assiniboin Indians have recently been estimated at about 4,500 souls, and are utterly uncivilized. They are of the great Sioux or Dacotah family, and speak the language of most of the tribes found on the north of the sources of the Missouri. They subsist entirely by the chase, and have not been yet persuaded to turn their attention to agriculture.

ASSISI, a town of the Papal states in the parish of Umbria. It is especially noted as the birthplace of St. Francis, the founder of the order of Franciscans, and as containing 12 monasteries of that order. Here are the church and monastery in which St. Francis is buried, and about 2 miles from the town is the celebrated portuncula or church where Francis first began the preaching of his ascetic life. Assisi was once a Roman municipium of some importance, as is evident from the remains with which it abounds. The most remarkable of these was a temple of Minerva, of which several Corinthian columns still stand. Assisi is now a bishop's see, and contains about 6,000 inhabitants. The region immediately around Assisi abounds in mineral waters.

ASSIZE, a term of the common law, having reference to several distinct subjects. Its most general use is applied to an ordinance for regulating the sale of provisions, and to the periodical sittings held by the judges of England, and law officers in the various circuits of England and Wales, for the trial of lawsuits as well civil as criminal. The term is of uncertain derivation. It may be either from *assido*, to assess, or *assideo*, to sit near or together, both of which are incident to the functions discharged at assizes. It is well known that the whole of England and Wales is divided into circuits or districts for the despatch of judicial business. The origin of this institution is attributed to Alfred the Great; although it was not perfect-

ed and reduced to its modern shape until the reign of Edward I., who was called the English Justinian on account of the number and importance of the changes effected during his reign in the laws, and their administration. Suits for the recovery of land were anciently tried by writ of right, or of assize. On these occasions the sheriff impanelled 4 knights and 12 assistants, to try the matters in dispute. This assize could only be held before a judge of the principal courts at Westminster; whereby enormous expense was entailed on the jurors, the parties, and their several witnesses. To remedy this grave inconvenience, provision was made by Magna Charta, that an assize should be held annually by a judge in each county. This declaration was enlarged by the statute of Westminster (18 Edward I. c. 8), which gave jurisdiction to the judges not only to sit in the grand assize, for the old purpose of settling disputes as to land, but also for the purpose of adjudicating all civil actions. The sittings thus held are familiarly known as sittings at *nisi prius*. The term has originated from the form of the process for summoning and impanelling the jury; which, following the words of the statute of Westminster, directs the sheriff to summon a jury to be at Westminster on the first day of term, unless before (*nisi prius*) a judge shall come to try issues in the county.—The criminal jurisdiction of the court at the assizes is derived from a commission of oyer and terminer, and general gaol delivery. Courts for these purposes are held at each assize. Two assizes a year are held throughout England and Wales, and in the metropolitan and some other counties which comprise populous districts. Three assizes are held under modern statutes. Courts of quarter sessions are also held in the several counties, cities, and boroughs. The sessions despatch business of a quasi-judicial character, ale-house licenses, poor law questions, appeals under certain statutes; and of late years, with the view of relieving the pressure of assize business, jurisdiction has been given to county magistrates sitting in sessions, to decide certain criminal causes of minor importance. Under the statute, the assizes are held by 2 judges of the superior courts of Westminster, one of whom usually presides in the criminal, the other in the civil court. All reserved points of law, exceptions, and other purely legal questions arising out of the proceedings at the trial, are argued subsequently at Westminster before the full court. Final judgment cannot be entered up until after the first 4 days of the term next after the assizes, which gives opportunity to move the court above for new trials, to set aside verdicts, or to stay judgment for any cause assigned. To obviate the evils of the delay thus afforded by common law, a recent statute gives discretion to the judge at *nisi prius* to certify for immediate execution, in all cases of simple contract debts. The bar at the assizes, or "upon circuit," as the more correct phrase is, is composed of the same

barristers who argue at Westminster. At the time of entering his forensic career, a barrister usually selects the circuit on which he intends to practise. This is determined either by local connections, or by other motives of personal preference. This point settled, a barrister cannot by etiquette flit from circuit to circuit, but abides by the one he has chosen. Sometimes, on a special arrangement, which is always accompanied by a very heavy fee, a leading barrister will be taken from his own circuit to conduct a cause at another,—the rigor of the rule being, as it would seem, relaxed in favor of a great man,—just the case where it should be most strict; though whether the celebrity of the advocate or the amount of the honorarium determines the question of propriety, is not quite clear. After a certain pitch of forensic fame has been attained, a great advocate sometimes ceases to go the circuit any longer, except on special retainer. Sir Fitzroy Kelly has received \$4,000 for one such fee, exclusive of daily refreshers.—The *ASSIZE OF BREAD*, or provisions (*assise venalium*), is the ordinance of a royal officer, or of the municipality, fixing the price and quality of bread, beer, meat, fish, coals, and other necessaries. This was anciently fixed by the clerk of the market of the king's household. By some municipal charters this power was delegated to the corporation.—*ASSIZES OF JERUSALEM* were the laws made in 1099 by Godfrey of Bouillon, and the princes and clergy, for the regulation of the kingdom of Jerusalem, formed in the first crusade.

ASSOCIATION OF IDEAS. There is a certain law of the human mind, by which one thing, or idea, coming into the field of consciousness, brings another along with it. This law is designated by the term association of ideas. Among philosophers, there has been much discussion concerning the nature of this law or action of mind, and what in an ultimate analysis is the ground of it. Hume was the first modern philosopher who attempted a scientific statement of association. Closely following Aristotle, he traced this action to certain principles which he denominated: 1, resemblance; 2, contiguity; 3, causation; and another has since been added, 4, contrast. The meaning of this classification is, that whenever a thought or perception is present in the consciousness, the mind spontaneously recalls either: 1, thoughts or perceptions resembling it; or, 2, those which occurred to the mind in contiguous time or space; or, 3, those which are effects of causes identical with, or similar to that which we recognize as the cause of the present perception, and also those which are either causes or effects of the present perception; or, 4, those which are so strongly contrasted with the present perception as to be regarded as its opposites in one or all its features or properties. Hume considered association the regulating principle of our mental activity. It is, however, not to be understood that the principle of association so regulates the action of

the mind, as to give to it that unity of impressions and recollections desirable to a fixing of its faculties on a given subject. On the other hand, if we were to follow the spontaneous suggestions of this power of association, the chain of our thoughts would present the most grotesque and whimsical appearance. The judgment must be exercised in selecting those associated thoughts which are perceived to have a natural connection with each other, in order that our process of reflection when represented to another, may appear orderly. This consideration gives rise to a classification of associations into: 1, natural, and, 2, artificial, or arbitrary. By natural associations are meant those which are founded in some natural resemblance spontaneously suggested to every mind, or when suggested justify themselves on natural and universal laws of mind; whereas by artificial or arbitrary associations are meant those which have been the result of an accidental individual experience, or of an intentional individual effort for the purpose of aiding the memory, and which, therefore, have no universal and general validity. An instance of the former is when I associate a book with its author, as a cause; of the latter, when I associate a certain book with a fishing-boat because I found it there. Dr. Thomas Brown made the association of ideas to depend on a mental law which he denominated suggestion, and divided into simple and relative. He reduces all the intellectual states to these two capacities. In simple suggestion, which he defines as that by which the mind associates ideas and emotions according to two classes of laws, primary and secondary, he includes all those faculties or activities denominated conception, memory, imagination, and habit. Attention and recollection are the first two of these, combined with desire or will, and revery is the third without any volition. In relative suggestion, defined as the feeling arising in the mind when two or more objects are perceived or conceived, he includes judgment, reason, and abstraction. All this theory of Brown implies that suggestion is an ultimate and simple fact or activity of the mind. If this were the case, it never could be voluntary. All simple activity must be spontaneous. Brown includes memory under suggestion. The fact is evidently the reverse. We are compelled to associate things which have been in the field of consciousness together or simultaneously, whether because naturally or accidentally thus allied, and simply because this association grounds in the fact that memory is inexorable and involuntary, and so brings the things thus once allied in consciousness into the field of consciousness together, when it brings them at all. Instead of memory being included in association, memory is itself the inclusive, and shuts up association or suggestion within itself. We have no power over a train of associated thoughts as they run through our minds like a chain drawn through our hands, simply because we had not the power over our expe-

riences at the first, when they were stamping themselves upon the tablet of the memory. I meet a man to-day with a hat in his hand. I never saw a hat before. To-morrow I find a hat by the road-side. I can no more restrain the thought of the man I saw yesterday than of the hat. Memory brings both of them into the field of consciousness, because they both make up the impression or picture of which the hat was a part. A complete history of the doctrine of the association of ideas is given by Sir William Hamilton in his edition of the "Works" of Dr. Reid, note, p. 889.

ASSONANCE, ASSONANT RHYMES, *asonancia*, in Spanish poetry, a peculiar species of rhyme, less complete than that in general use. It consists in the correspondence of the last accented and all subsequent vowels only, while the consonants may and should be different. Rhyme, as it is used in the English language, is called, in Spanish, *consonancia*. Thus, *b(a)r-b(a)r(o)* is assonant, but not consonant with *a(a)m(o)*, and *pl(a)t(a)n(o)*. *B(u)cas* is assonant with *c(u)ran*. So in English, "baby" and "chary" would be assonant to each other. Assonant rhymes do not generally follow each other in pairs, as in ordinary English rhyme, but alternate with a blank verse, as:

A caballo salió el Moro
Y otro día deechado
En negras andas le vuelven
Por donde salió a caballo.

Calderon, and the other classical dramatists of Spain, always use *asonantes*. Here is an example of double *asonantes*:

Aguárdate, dixo el pavo
Al cuervo de los
Sabes lo que estás pensando
Que eres negro y feo.

ASSOUCY, CHARLES COYNEAU D'. This French literary gentleman, who was born in Paris in 1604, and died in 1674, was one of the most grotesque characters of the literary gypsy order of the 17th century. He was educated by the Jesuits, and his mind became so precociously developed that at the age of 9 he ran away from his parents to England. At Calais he passed himself off as the son of Nostradamus, and narrowly escaped being drowned by the good people of that town, who took him for a sorcerer. In 1621 he turned up as a music teacher, at Montpellier, but being expelled from the town, he betook himself to Turin, where he insinuated himself into the good graces of the dowager duchess of Savoy. He had a knack for flash songs, and played the lute admirably well, and on his return to Paris he found favor in the eyes of Louis XIII., who was at times afflicted with hypochondria, and found a pleasant relief in the harmonious buffooneries of Assoucy. In 1654 he went on a great musical expedition all over southern France from Lyons to Montpellier, giving concerts in every town and village, and spending in gambling the money and presents which he received, for gambling was one of his foibles. At Lyons he fell upon Molière, with his itinerant troupe of

comedians. Between Molière and Assoucy there were naturally many bonds of sympathy, and 6 months passed before the merry adventurer could drag himself from the society of the jolly dramatist. In Montpellier Assoucy met with an accident. He had taken two assistants with him on his ambulating musical trip, two sprightly creatures, dressed in the garb of pages, who by the people of Lyons were supposed to be women, while the authorities of Montpellier declared them to be young men. In Lyons he had the reputation of a Don Juan, but in Montpellier it was much worse. Unnatural crimes being punishable with death by fire in Montpellier, Assoucy narrowly escaped the stake by a precipitate departure for Avignon in the Papal states. From Avignon he bent his steps to Turin, where he resumed his functions with his old acquaintance the venerable dowager duchess of Savoy, but some satirical verses brought him into disgrace. He was requested to leave the Sardinian capital, and proceeded to Rome. But satire again involved him in difficulties. He used strong expressions against the priesthood, and was thrown into prison. While there, he made a lucky hit. St. Amand, the French poet, had given great offence to the Romans by his tirade against Rome, in his poem, entitled *Rome ridicula*. Assoucy replied to this in a felicitous manner, and in verse. Some influential persons were pleased with his refutation of what they considered St. Amand's slander. The pope himself, Clement IX., was highly satisfied with it, sent for him, and presented him with his portrait engraved upon a golden medal. From Rome he went to Marseilles, where for several years he observed the greatest discretion. At length he returned to Paris in 1670, but there he found the Montpellier accusation suspended over him, and on his arrival he was marched off to prison, from which, however, he was released, after a detention of 6 months, the poor fellow turning out innocent after all. During the rest of his life he devoted himself to the composition of various works, suggested to him by his singular experiences. Some of his poetry is pleasant and graceful enough, but he was not intended by nature for a poetical genius, and became a butt of ridicule for the literary notabilities of his day.

ASSUAY, or ASUAY, a department of Ecuador, lying mostly east of the Andes, between the Amazon and Putumayo rivers, and extending from the equator to lat. 5° 30' S., and from long. 68° 30' to 79° 20' W. It contains 138,926 square miles and about 200,000 inhabitants, nearly five-sixths of whom are Indians. It is well watered, having the Ambyacu Napo, Nanay, Pequena, Chambyra, Pastaza Morana, and Paute rivers traversing it, beside other smaller tributaries of the Amazon and Putumayo. The whole western portion is an elevated desert, called the Paramo or desert of Assuay, being a plateau formed by the intersection of the Andes by 2 chains of mountains running from E. to W. and enclosing the vast

plain of Quito. The remainder of the department is fertile, but is in the hands of Indian tribes, except a few towns. There are some mines of gold and silver in the mountainous districts. The principal towns are Ouença, Loja, Zaruma, Tumbes, and San Juan de Bracamoros.

ASSUMPSIT, in law, "he undertook," the compendious title under which an extensive class of actions at law are included. After stating the cause of action, the pleadings state that thereupon "the defendant promised to pay." Assumpsit may be either special or common, also called *indebitatus assumpsit*. Under the former are included actions upon written contracts or agreements of all kinds; actions for derelictions of duty by professional men, carriers, warehousemen; in short, under every circumstance where a contract is in actual existence or can be predicated from the relations of the parties. Common assumpsit is an action brought for goods sold and delivered, money lent, &c. Theoretically all actions of assumpsit are brought to recover compensation in the nature of damages; but, where those damages can be immediately ascertained by the acts of the parties, as for goods sold and delivered, where a price has been agreed, then it is common assumpsit.

ASSUMPTION, a festival of the Roman Catholic church, instituted to commemorate the ascent of the Virgin Mary into heaven. From a very early period it has been the general belief of the western and oriental churches that after her death the Virgin was taken up, body and soul, into heaven. This event is called promiscuously in the ancient ecclesiastical writings, the "assumption," "passage," or "repose," and is mentioned by various early authors, among whom are the learned Andrew of Oreta, in the 7th century, and St. Gregory of Tours, in the 6th. The date of the institution of the festival is unknown, but it is mentioned as having been celebrated with great solemnity before the 6th century, in both Greek and Latin churches. It falls on the 15th of August.

ASSUMPTION, a district or parish in the S. E. part of the state of Louisiana, having an extent of 820 square miles. It has within its limits a part of Bayou La Fourche and Lake Venet. The soil is very fertile, and mostly devoted to the cultivation of sugar, of which, in 1850, it produced more than any other parish or county in the United States, except Iberville parish. Pop. in 1850, 10,598, about one-half of whom were slaves.—Also, a post village in the above parish on the W. side of Bayou La Fourche. It is the county seat of Assumption parish.

ASSUMPTION, or **ASUNCIÓN**, a city of South America, the capital of the republic of Paraguay, is situated on the left bank of the Paraguay river, a short distance above the point where it receives the waters of the Pelcomayo, and 660 miles above Buenos Ayres, lat. 25° 18'

S. long. 57° 85' W. It was founded in 1585, but for nearly 800 years was but a small village with a fort. During the present century, however, it has grown to be a place of some importance. It has a cathedral erected in 1845, 6 churches, a government palace, a hall for representatives, a public library, 4 convents, a custom house, theological seminary, and college. The houses are generally of brick, some of the streets are paved, and the appearance of the town, compared with many South American cities, is neat and cleanly. It has considerable trade with Buenos Ayres, Ohili, Peru, Tucuman, and other portions of South America, exporting tobacco, hides, cedar planks, mandioca, and, above all, *maté* or Paraguay tea, for which there is a great demand all over South America, and which is produced in greater perfection in Paraguay than elsewhere. Its former rulers interdicted trade with foreign countries, but recently liberal provisions have been made by the government for a more extended commerce. Pop. about 12,000.

ASSUMPTION, one of the Ladrone group of islands in the Pacific ocean, lat. 19° 45' N. long. 145° 27' E. It is of volcanic origin, rises to the height of about 2,000 feet, and is nearly 10 miles in circumference. It produces coconuts, rice, oranges, and bread-fruit.—Also, an uninhabited island in the Indian ocean, S. lat. 9° 14' E. long. 46° 40', a dependency of the Mauritius.

ASSURANCE. See **ANNUITIES** and **INSURANCE**.

ASSWAN, or **ASSUAN**, the ancient *Syene*, a town of upper Egypt, on the right bank of the Nile, opposite the island Elephantine, in lat. 24° 5' N. It has considerable commerce in dates, senna, wicker-baskets, and slaves from Abyssinia and upper Nubia. The surrounding scenery is picturesque, and the Nile here presents the appearance of a small lake. On the southern side are the ruins of an ancient Sarcen town, which was so populous during the middle ages that 20,000 persons are said to have died there by one visitation of the plague.

ASSYÉ, or **ASSAYÉ**, a village of Hindostan in the Nizam's dominions, 28 miles north of Jaulnah, near which, in 1803, the Duke of Wellington (then General Wellesley), with 2,000 British troops and 2,500 sepoy (native soldiers), defeated the combined force of Scindia and the Nagpoor Rajah, amounting to 80,000 men.

ASSYRIA. Both the geographical extent and history of this ancient kingdom are involved in much obscurity. We are mainly confined to 3 sources of information, and those are sufficiently scanty, viz., the Bible, Herodotus, and Ctesias; and there are few particulars in which they do not present some discrepancies. The postdiluvian inhabitants of the world, or at least the majority of them, had settled in the extensive plain lying between the Tigris and the Euphrates. There they attempted to establish a kingdom and a religious worship which should consolidate them, and so prevent

the evils they feared from being scattered abroad over the face of the whole earth. From this project they were soon barred by the divine interposition confusing their speech. From the deserted Babel, Nimrod and a portion of his followers journeyed northward to the great Carduchian chain, where, on the eastern bank of the Tigris, in the vast region of Mesopotamia, they founded the city of Nineveh. This was the germ of Assyria. Assyria, in its earliest history, may be thus defined: For its south-western boundary it had the Tigris, and for its north-eastern the Zagros mountains, extending northward to Armenia, and southward to the parallel of latitude on which is the city of Babylon. The tradition of the inhabitants of that territory to this day goes to prove that the kingdom was originally founded by Nimrod. Assyria being thus established by a division of the Babylonian population, it would be natural to expect that both kingdoms would be feeble for a time. We need not wonder, therefore, that the brief histories of the period bring to us small record of the doings of these necessarily rival empires, for several centuries. Josephus mentions that the Assyrians had dominion over Asia in the time of Abraham, but this is too vague a statement either to inspire much credit, or give much information. He also styles the Chushan Rishathaim, to whom the Israelites became subject in the time of the judges, an Assyrian king. With these two glimpses of the Assyrian power, we must be content to pass over a hiatus of several centuries. In the time of Jonah, an Assyrian king is mentioned, but not named. The first Assyrian monarch who seems after the founder of the empire to emerge from the realm of myth into that of history, is Pul, who is named in 2 Kings xv. 19, as coming up against Israel. But a doubt gathers even about him when we recognize in the names of other Assyrian kings further on, the recurrence of the same monosyllable which constitutes his name. We are struck with the apprehension that we may only have reached an Assyrian royal title, instead of a personal king. But at least about this time Assyria seems to be coming forward as a reigning power, though for how long she may have previously been so, we cannot determine. In the contests which were then going on between the divided tribes of Israel and Judah, we find it was the custom of each, whenever the scales of fortune seemed to be turning against them, to throw themselves for protection on the kings of Assyria. The hiatus is passed over, and we at length reach Assyrian history again, with Tiglath-Pileser on the throne. This king is known in Biblical history as the one with whom Ahaz, king of Judah, formed a confederation in his troubles with Pekah and Rezin, at the expense of the sacred vessels of the temple, and the ornaments of the palace. In accordance with the stipulations of this purchased alliance, Tiglath-Pileser made war upon the confederated kings of Syria and Israel. Shal-

maneser succeeded him, and completed the subjugation of Israel, and the destruction of his capital (721 B. C.) This added both to the extent and strength of the Assyrian empire. The same king also conquered Phœnicia, with the exception of Tyre, which successfully resisted a siege of 5 years. The close of Shalmaneser's reign marks the era of Assyria's greatness. Her empire reposed upon the Mediterranean, the Caspian, and the Persian seas. Meanwhile, an expedition had been undertaken against Egypt, the probable cause of which may be found in the attitude into which those two powers came to each other in the troubles between Judah and Israel, Egypt favoring Israel, and Assyria Judah. The conspiracy of Hoshea with So, king of Egypt, will be recollected as the alleged cause of the destruction of Samaria, and the entire reduction of Israel to the rank of an Assyrian province. The expedition against Egypt could not have been very successful, for, if we may trust chronology, in a few years after we find Hezekiah attempting to throw off the vassalage into which his father had brought the kingdom of Judah; and although the attempt was unsuccessful through the artful policy of the Assyrian monarch, yet it suffices to show that Egypt was but partially subdued. Indeed, the very failure itself was on account of a contemplated expedition of Assyria at that very moment, upon Egypt, to complete its subjugation. This time the attempt was more successful, and the throne of the Pharaohs paid heavy tribute to Sennacherib. The result was not, however, without disaster to the Assyrian fortunes. A rumored attack from Ethiopia, and a destroying pestilence that visited his army, compelled the Assyrian monarch to an almost precipitous retreat from the scene of his conquest (2 Kings xix. 35), without avenging himself, as he had intended, upon Hezekiah, for the insurrection in the Judæan province. Meanwhile the ancient kingdom of Babylonia had been in the condition of an Assyrian province, probably ever since the founding of the Assyrian kingdom at Nineveh, and governed by viceroys. In the reign of Sennacherib, his son Esarhaddon had been the viceroy of Babylon, appointed for the purpose of cementing more closely the apparently sundering province to the empire. On the death of Sennacherib, Esarhaddon was called to the throne. He appointed Nabopolassar, a Chaldean, to the viceroyalty of Babylon in his own stead, in the hope thus to strengthen his kingdom, by restoring to the growing Chaldean power in Babylonia the supremacy which, by the policy of his father, had been taken from them. This king also avenged the insurrection of Judah, from which his father had been deterred, and also colonized Samaria with the descendants of Judah and Benjamin (Ezra iv. 2). But his policy in the restoration of the Chaldean element in Babylonia was disastrous to the fortunes of Assyria. (See BABYLON.) The Medes had thrown off

the yoke, and the growing importance of Babylonia already threatened the very existence of Assyria. From this time, Assyria losing the prominence she had for a century maintained, her history sinks again into the realm of the mythical, and Babylon takes up the sceptre which Assyria lays down. This transfer of power back to the long-deserted valley of the Euphrates, occurs in the reign of Ninus, Nebuchodonosor, and Sarac, the successors of Esarhaddon, on the Assyrian part, and was consummated under the viceroyalty of Nabopolassar at Babylon, who, with the assistance of Cyaxares, king of Media, destroyed Nineveh, and reduced Assyria proper to a province of Media, under which name the remaining history of Assyria will appear.—Herodotus makes the Assyrian kingdom to have continued from the time when it comes first distinctly forward into history, through a period of 520 years, which, according to Niebuhr, is to be increased by 128 years, during which Nineveh continued a powerful empire, after the independence of Media and Babylonia. Otesias assigns it an existence of 1,305 years, which is probably fabulous. The political constitution of Assyria was like that of Chaldea and Persia, a despotism, divided for administration into satrapies. The religion of the kingdom was Chaldean, which serves in part to explain her overthrow, supposing a gradual encroachment of an ecclesiastical over a civil power. The language of Assyria was not Semitic, but Medo-Persian, which seems to have been a branch of the Indo-Germanic. The aboriginal inhabitants of Assyria proper appear to have been Koords. Its territory pretty nearly corresponded with the present Turkish pashalics of Mosul, Koordistan, and the upper half of Irak Arabi. The principal rivers of Assyria are the Euphrates and Tigris, and the Great and Little Zab. The upper part is mountainous, while the southern is level. Metals abound in the mountains. The vegetable productions are those of the northern temperate zone. It is divided geographically into 3 unequal provinces by the Great and Little Zab rivers. The most southern was variously named. The middle one was known to the ancients as the Adiabene, while the northern was called Aturia, of which Assyria is probably only a corruption. This, therefore, may be regarded as the central point of Assyria, from which radiated the power which in the palmy days of Shalmaneser and Sennacherib spread over an area of 400,000 square miles, and controlled the commerce of 3 seas. There is much confusion of dates in those few writers who make mention of Assyria, to reconcile which some modern critics have resorted to the supposition of a second Assyrian kingdom, partly synchronous with that whose history is here given, and of longer continuance. It is, however, more probable that the confusion grows out of frequently using Babylonia, Chaldea, and Assyria synonymously, by the ancients. (For an account of ASSYRIAN ANTIQUITIES, see NINEVEH.)

AST, GEORG ANTON FRIEDRICH, a German philologist, born at Gotha in 1778, died in 1841. He was appointed in 1805 professor of classical literature at Landahut, and in 1826 was transferred to the university of Munich in the same capacity. In the latter part of his life he devoted himself almost exclusively to the study of Plato, of whom he produced a new edition in 11 volumes, with Latin translations and voluminous commentaries, and a *Lexicon Platonium* in 8 volumes.

ASTARTE. See ASHTORETH.

ASTBURY, J., an English manufacturer, born 1678, died 1743. He is celebrated in the history of the Staffordshire pottery trade. He learned the operations of the trade from the Eulers of Nuremberg, who had established themselves at Bradwell. He set up an establishment of his own at Shelton, and was the first to apply pipe clay to the fabrication of cooking utensils. He made many other inventions in his trade which were all successful.

ASTELL, MARY, an English authoress, born at Newcastle-upon-Tyne in 1668, died at Chelsea, a suburb of London, May 11, 1731. She wrote "An Essay in Defence of the Female Sex," "A Serious Proposal to the Ladies," &c., with the purpose of raising the standard of female education and female character. She was, however, a warm conservative, and decidedly opposed to the new-fangled spirit of the times.

ASTER (*αστρον*, star), a very rich group of plants, of the fam. *compositae* Adans. (*synanthera* Rich, *asteraceae* Lindl.), placed in the *syngenesia superflua* by L., distributed in two subdivisions of Endlicher's tribe *asteroides* of the sub-order *tubuliflora* of said family. The composites are one of the most natural and the most perfect of all families of plants, as well as the most numerous, being spread over every country of the globe, and containing $\frac{1}{5}$ of all known phanerogamous genera. They predominate on the continent of America. The true genus aster is most developed in North America, especially in the United States, which are thus literally star-spangled. Together with peculiar conifers, oaks, walnuts, the genus *solidago* (golden rod, of the same sub-order with the true aster), it characterizes the northern zone of North America, as one of the botanic regions into which the earth is divided, and which is named from Michaux; the southern zone, characterized by trees with shining broad leaves and large flowers, being called the region of Pursh. The plants promiscuously called asters belong to several genera, of which the real aster is richest in species. Out of 150 species cultivated in Europe more than 100 are natives of N. America. Character of the group: corolla of perfect flowers regular, 5- seldom 4-toothed; styles linear; ovary inferior, 1-celled, ovule erect. Flowers capitate; involucre imbricate, lower scales often spreading; florets of the ray generally more than 10 (none yellow). Receptacle naked; pappus (egret) simple, in few double, hairy. I. ASTER: herbaceous, many species

very stately; from 4 inches to 10 feet high; ray-colors purple, or blue, violet, lilac, white, rosy (of all shades); disk yellow or brown; some change color with age; inflorescence; panicle, or corymb, or raceme, or solitary, or spike; leaves mostly simple; blossom from July to November, some twice or through the summer, if their stem be cut down; some flourish in fields, near roads, some near swamps, or salt marshes; some in rocky soil, mountains; exhaust the soil; propagable by suckers. The finest American species are, *A. nova anglia*: stem erect; leaves narrow, lanceolate, clasping, auriculate at base, crowded on branchlets; involucre scales loose, colored, longer than the disk; hairy; flowers great, blue violet, crowded in terminal corymbs 3 to 8 feet high. *A. puniceus*: habit of the preceding; stem purplish; leaves serrate, rough; flowers purple or blue in panicles, 6 to 10 feet. *A. cyaneus*: stem wandlike, branches spreading; leaves linear; flowers many, large, blue in paniculate racemes. Very handsome, 8 to 4 feet. The other fine species are: *horizontalis*, *spectabilis*, *multiflorus*, *californicus*, *macrophyllus*. Species changing the color of flowers: *surculosus*, *versicolor*, *mutabilis*, *eminens*, *paniculatus*. Among the non-American species are: *A. alpinus*, very small; flowers great, violet, disk yellow. *A. omellus* (pink of Christ), and *amelloides*, with numerous very large fine blue flowers. *A. parisiensis*, very elegant. *A. caespitosus* (turf-like), with large whitish-violet flowers. All are called in England Christmas daisies. II. *CALLISTEMMA* or *callistephus* (kalos, beautiful, στεμμα, crown), or *asterchinensis*, in French *Reine-Marguerite*, on account of its valuable properties and numerous colors of all shades except yellow. Grows easily in all soils, resists heat and drought; sown at different times, it blossoms through the spring, summer and autumn; simple, double, of most numerous varieties. III. *OLEARIA DENTATA*, or *A. tomentosus*, of New Holland; shrub; leaves oval toothed, woolly beneath, flower-heads solitary, large, white; hot-house plant. II. and III. are of Endlicher's *diplopappus* (double-egret). IV. *EURYBIA* (wide-spreading, in offsets), *A. argyrophyllus* (silver-leaved), of New Holland; shrub, of rapid growth to 10 feet; flowers many in little heads, whitish gray; disk yellow; musk-scented; flowers in April and May. *E. lyrata*, flowers white. Hothouse-plant. V. *CALIMERIS* (fine part), *A. inc.* of Siberia; flowers large, lilac in July; 2 feet high. VI. *AGATHARA* (good, excellent), *A. coelestis* of the Cape of Good Hope; bush, blooms the whole year, sky-blue, disk yellow, 1½ to 2 feet; hothouse-plant. All species of this group are very slightly aromatic. Many congeners of the sub-order are medicinal, being astringent, or bitter, or acrid, or strongly aromatic.

ASTER, ERNST LUDWIG, a Prussian general, known as the author of the modern system of Prussian fortifications, born in Dresden in Nov. 1778, died in Berlin, Feb. 9. 1855. At

the outset of his career he served in the Saxon army, in which his father, who died Dec. 1, 1804, held a high position. His first achievement was in connection with a plan for the fortification of Torgau, a town in Prussian Saxony, which in 1810 was adopted by Napoleon. After fighting in the ranks of the Saxon army in the Russian campaign of 1812, and holding for some time the command of the new fortress of Torgau, he left the Saxon and entered the Russian service. Here he took part in the battles of Bautzen and Leipzig, and distinguished himself by his prowess during the conflicts of 1818 in Upper Lusatia. In 1815 he connected himself with the Prussian army, and by the active display of his proficiency in the military sciences, he rose in the same year to the rank of major-general and inspector-general of the Prussian fortifications. He was an accomplished mathematician and tactician, and his knowledge, fostered by an assiduous study of the systems prevalent in the different military organizations of Europe and strengthened by lifelong experience, found a field of practical application in the fortification of Coblenz and Ehrenbreitstein, which was effected under his superintendence. Of these 2 fortresses he became commandant in 1825. At the same time he continued to attend to the duties of inspector-general of all other Prussian fortifications, and chief of the corps of engineers and pioneers. In 1827 he was made lieutenant-general, in 1837 member of the privy council, and in 1843 general. He left several works, the first 2 vols. of which appeared at Berlin in 1856. Of 3 of his brothers, all employed in the military service of Saxony, KARL HEINRICH, born in Dresden, Feb. 4, 1782, died there Dec. 23, 1855, became known to fame by his writings on military topics. His *Lehre vom Festungskriege* (Manual of the Science of Warfare in connection with Fortresses), was translated into several foreign languages, adopted as a text-book on the subject, in the military academies of Prussia, and passed from 1812 to 1885, through 8 editions.

ASTERABAD, a province and town of Persia, S. of the Caspian sea, from which it is about 10 miles distant. The province is well watered and fertile, but the depredations of the Toorooman tribes prevent its inhabitants from profiting by its local advantages. The town is of no importance in itself. As the nearest frontier town to the Caspian, whose waters are traversed by Russian vessels, it may be of great value in future military operations in central Asia. The Russians have introduced several steamers in the Caspian, and it has even been rumored that they had obtained permission from the Persian government to establish a body of troops there.

ASTERIAS, a genus of radiated animals including, according to the division of De Lamarck, only the star-fish. They are placed by Prof. Forbes in the sub-division *asteria* of the family *asteriadae*. The common "five fingers" found

on our sea beaches are asterias; under each finger or ray extends a long channel, through small holes in the sides of which the feet or tentacula project in great numbers. Each foot terminates in a little disk which attaches itself to substances by expulsion of the air. These assist the motion of the animal, which is further effected by small movable spines spread over its lower surface.

ASTERISK, from the Greek, meaning a small star. Its modern typographical use is to indicate a note at the foot of the page, or where there are several on the same page, it is generally chosen to indicate the first note. In ancient manuscript writings, where it is sometimes written thus (*), it is a critical mark to signify either that the passage against which it is set is in its right place, or that it is a remarkable or beautiful passage in itself; it is the antithesis of the obelus or obelisk (†). When used along with the obelisk it signifies passages which are genuine, but in the wrong place.

ASTERN, a term in nautical language used to signify the hinder part of a ship, or the space behind the ship.

ASTEROIDS, a group of small planets, revolving between the orbits of Jupiter and Mars. The 1st was discovered in Jan. 1801, the 5th in Dec. 1845, the 48d, April 16, 1851, the 47th, Oct. 8, 1857, by Mr. James Ferguson, at the national observatory, Washington, D. C., and the 51st, at Nîmes, in France, Dec. 24, 1857, by M. Laurent, of the assay office.

ASTHMA (Gr. *ασμα*, from *ασ*, I respire), a disease characterized by an extreme difficulty of respiration, which is worse at certain seasons of the year, and particular periods of the day; being generally most severe at night.—The difficulty of breathing is increased by violent emotions, damp atmosphere, excess of any kind, strong exercise, running, walking quickly, or ascending a flight of stairs. It is also more laborious in the horizontal position, and hence more distress is felt in bed at night; the warmth of the bed also excites increased secretion of the mucous follicles, and this blocks up the air passages more completely, causing paroxysms to be more frequent than during the day. The patient seeks relief by sitting upright in bed, or bending his body forward, and endeavoring to expand the chest mechanically by every possible means. Aretæus described these efforts of asthmatic patients in the following words nearly 1,800 years ago:—"Sub dio ambulare cupiunt, et spirant quasi totum aërem trahere vellent." The description is just as good for the same disease in our day. The patient longs to be in the open air, and during paroxysms seems as if he wished by intensely anxious and straining efforts to draw the whole atmosphere into his lungs at each inspiration. When the paroxysm ceases and the chest has been relieved by coughing and expectoration, the patient is comparatively easy for a time, sometimes for a whole day; but night brings on the

same obstruction of the air passages by inspissated mucus, and the same paroxysms of impending suffocation, coughing, and difficult expectoration. Old persons are more liable to the disease than young, as they have generally been more exposed to the extremes of heat and cold, and the inclemencies of weather in all seasons; not to mention bodily and mental fatigue, excessive sensual indulgence, sedentary habits, confined atmosphere, and various debilitating causes which injure the constitution generally, and the nervous system more especially; predisposing the lining membrane of the air passages to chronic irritation, and rendering them sensitive to every change of temperature; colds and catarrhal affections become gradually chronic, the air passages become habitually obstructed, and asthma finally becomes the settled penalty for all the past transgressions of this kind against the laws of nature and the health of the transgressor. Some persons who inherit weakly constitutions from asthmatic parents, are predisposed to become affected by the same disease, more easily than others, and only guard against it by extreme precaution, in avoiding all excessive sensual indulgence, and exposure to fatigue of any kind; bad air, ill-ventilated rooms, sedentary habits, ardent spirits, poor food, extremes of temperature, and all the causes which, in fact, are apt to bring on the disease, where hereditary weakness forms a predisposing liability to the affection.—The pathology of this disease differs, of course, in different cases, and hence the apparent difference of opinion among medical writers and authorities; some describing the disease mainly as a nervous affection; others as the result of organic lesion of the heart and blood-vessels; while others again attribute it to dilatation of the air-vessels of the lungs. All these and many other complications may and do exist. It is now believed that spasmodic asthma is caused by a spasm of the muscular fibres encircling the bronchial tubes, especially the smaller branches. The existence of these fibres has been proved by eminent physiologists, who have produced contraction by galvanizing them. In common asthma, the lining membrane of the air passages is more or less affected as in chronic bronchitis, but the affection of the mucous membrane extends further down into the lungs, the air-cells are more obstructed, and the conformation of the chest itself is often somewhat contracted and defective. The action of the diaphragm is imperfect, as well as that of the walls of the chest, and hence it is that, from want of innervation and free action in these parts, the disease is commonly deemed nervous, as distinguished from chronic bronchitis, which affects the bronchial mucous membrane chiefly. In spasmodic asthma, the nerves are still more deeply implicated; their action seems defective in the respiratory organs, as stammering shows imperfect nervous action in the organs of speech; and in both cases the difficulty is increased by physical or moral ex-

citement. Chronic asthma, however, is not a dangerous disease. It seldom shortens life, where patients carefully avoid all violent emotions, exercises, and excess, although spasmodic paroxysms may endanger life at any time where these precautions are neglected. The precursory symptoms of asthma are languor, flatulency, and general debility; headache and a feeling of heaviness over the eyes; uneasiness about the præcordia, with a sense of fulness and straightness in the epigastrium.—Attacks of spasmodic asthma generally occur during the first sleep, soon after midnight, or very early in the morning. The patient suddenly awakes with a sense of suffocation, tightness of the chest, and difficulty of breathing. The respiration is wheezing and laborious, the shoulders are raised, and every effort made to enlarge the chest. After a short time, the pale and anxious countenance becomes suffused or bloated, and covered with perspiration. The pulse is usually quick, weak, and irregular; the lower extremities cold. When cough and expectoration come on, the patient is relieved, and soon the pulse and respiration assume their natural state. The spasm, however, may continue half an hour or more, and even as much as 3 or 4 hours, in some cases, before relief can be obtained by coughing and expectoration. During the paroxysm, the muscular fibres are in a state of spasm. By this contraction the lungs are in a manner contracted within the chest, and the walls of the thoracic cavity, pressed by the weight of the external atmosphere, lose that sonorous elasticity produced by the natural distension and fulness of the air-vessels in the lungs.—Asthma is generally complicated with diseases of the heart or with chronic bronchitis, acting as a source of permanent congestion, predisposing the parts to be more easily thrown into a state of spasm. Sometimes severe attacks of dry catarrh are aggravated by spasm, as in the "bronchial asthma" of Andral.—The most common consequences of the disease are chronic inflammation and dilatation of the bronchi; emphysema and œdema of the lungs; hæmoptysis; tubercular deposits are also very frequent concomitants; hypertrophy and dilatation of the cavities of the heart; effusions into the pericardium, the pleura, and sometimes congestion and effusions in the head, giving rise to coma or apoplexy. The treatment of the paroxysm consists in administering narcotics and antispasmodics, to be given, if possible, as soon as the first sensations are felt. Strong coffee, laudanum, and ether, are among the best, and stramonium smoked as tobacco is often very useful, but should be used with caution where the heart is diseased. Those medicines are most effectual which produce expectoration. In the intervals of paroxysms, the general health of the patient requires due attention, and most careful treatment.

ASTI, a city of the Sardinian states, the *Asta Pompeia* of antiquity; in the middle ages a place of considerable importance, the capital

of the republic of Asti, the independence of which was recognized in 1098 by Humbert II., count of Savoy. In 1155, Asti was reduced to ashes by Barbarossa; subsequently it belonged successively to the king of Naples, Robert d'Anjou, to the Viscontis, and the dukes of Orleans, and eventually, in 1528, was ceded by the emperor Charles V. to the house of Savoy. Asti is a flourishing town of 20,000 inhabitants, situated not far from the junction of the Balbi and Tanaro rivers, within a short distance of Alessandria, surrounded with the walls of the old fortress. Its sparkling wine is well known, and it is also famed as the birthplace of Alfieri.

ASTLEY, THOMAS, a celebrated English antiquary, and a man of great erudition, born in Staffordshire in 1784, died in 1803. He contributed to the *Archæologia*, and assisted in the publication of many records, MSS., catalogues, &c.; was appointed keeper of the records in the Tower. His principal published work was entitled "The Origin and Progress of Writing, as well Hieroglyphic as Elementary, 1784," a second edition of which appeared in 1803.

ASTLEY, SIR JACOB, afterward Lord Astley, one of the most gallant and most constant adherents and commanders of Charles I. against the parliament, died in 1651. He was major-general of the first army, raised for the king, under the earl of Lyndsey; and commanded the infantry in the first battle of Edgehill, in which the foot of the royalists came so near to gaining a complete victory, that, if the headlong and impetuous Rupert, whose rashness lost the king almost every action in which he was engaged, had wheeled on the flanks and rear of the Puritan infantry, after defeating their horse, instead of chasing the beaten troopers, 5 or 6 miles off the field, the war had been finished in a day, and the king of England would have grasped almost despotic power. At Naseby, being now advanced to the peerage, he, as usual, commanded the foot of the royal army, which, as usual, firing only one volley and charging with their swords and the butt-ends of their muskets, beat the enemy's infantry and threw them into utter confusion. Rupert had broken the left wing of the parliament's horse, and taken 6 of their best cannon; but again, instead of wheeling on the flank of the foot, he chased to the rear, and never returned until the field was lost. On the king's left, Cromwell with his ironsides had broken and overpowered Sir Marmaduke Langdale's cavaliers, and the king's horse reserves, refusing to charge, while the enemy was in disorder, with his horses blown, by doing which they might have redeemed the day. Fairfax and his lieutenant-general Oliver charged the infantry on all sides, and, not until after several repulses, and with tremendous loss, cut it to pieces, and took all the guns and baggage, and even the king's private correspondence and secret letters to the queen, which were, in the end, among the principal causes of his execution. After this defeat, the war was at once resolved into a series of small partisan encounters, until

such time as the parliament commanders found means to crush the several divisionary powers in the various counties into which the scattered and defeated army of the king had resolved itself. The last of these conflicts, which terminated the campaign of 1645, and in fact the war itself, was the total rout and defeat of Lord Astley, who, as it is related by Clarendon, "being upon his march from Worcester toward Oxford with 2,000 horse and foot, the king having appointed to meet him with another body of 1,500 horse and foot, letters and orders miscarried and were intercepted; whereby the enemy came to have notice of the resolution, and drew a much greater strength from their several garrisons of Gloucester, Warwick, Coventry, and Evesham; so that the Lord Astley was no sooner upon his march, than they followed him; and the second day, after he had marched all night, and when he thought he had escaped all their quarters, they fell upon his wearied troops; which, though a brave resistance was made, were at last totally defeated; and the Lord Astley himself, Sir Charles Lucas, who was lieutenant-general of the horse, and most of the other officers who were not killed, were taken prisoners. The few who escaped were so scattered and dispersed that they never came together again, nor did there remain, from that minute, any possibility for the king to draw any other troops to the field." The barony expired with its first possessor; but his descendants still hold his original rank, as baronets in the county of Norfolk, among the gentry of which shire they hold a distinguished place; and the Christian name, Jacob, of the king's honest, brave, plain major-general, still remains at the head of the family.

ASTLEY, PHILIP, a famous equestrian, was born at Newcastle-under-Lyne in 1742, and died in Paris, Oct. 30, 1814. His father was a cabinet-maker, and in 1758-'4 removed with his son to London, where they pursued that trade until 1759, when young Astley enlisted in Elliott's light horse. He served in the German wars for 7 years, and distinguished himself in many actions by his bravery; he was rapidly promoted, and particularly noticed by his general. On the return of the army from the war, he obtained an honorable discharge and certificate of service. Being an expert horseman, Mr. Astley now commenced practising in public as an equestrian; by constant industry and economy he at length acquired sufficient means to enable him to build a circus or amphitheatre, which, under the titles of "Amphitheatre Riding-House," "Royal Grove," "Amphitheatre of Arts," and "Royal Amphitheatre," he conducted successfully until 1794, when it was destroyed by fire, its owner being then with the army on the continent. In 1795 it was rebuilt and again destroyed by fire in 1808; but with characteristic perseverance Mr. Astley erected a new amphitheatre in 1804, which he leased to his son. During his life he built for his own uses 19 theatres in London, Paris, and Dublin,

and in connection with Antoine Franconi assisted to establish the "Olympic Circus." He published several works, including "Remarks on the Duty and Profession of a Soldier," 1794, "Description and historical Account of the Places near the Theatre of War in the Low Countries," 1794, "Astley system of Equestrian Education," 1801, &c. Mr. Astley was a man of imposing appearance, being upward of 6 feet in height and of great muscular development; he was greatly respected by all who knew him, and many acts of charity and benevolence are recorded of him, proving that he was as deserving of love for his kindness of heart, as of respect and admiration for his perseverance, great physical powers, and personal bravery.

ASTOLPHUS, called by the Germans Aistulf, king of the Lombards in northern Italy, succeeded his brother Rachis 749, and died in 786. After having seized the exarchate of Ravenna, he threatened Rome. Pope Stephen II. fled to France and demanded aid from king Pepin. As Astolphus refused to withdraw, Pepin crossed the Alps (754) with an army. Astolphus was vanquished and fled to Pavia, where he was besieged. He obtained peace on condition of restoring Ravenna and all his other conquests. On the withdrawal of Pepin, Astolphus burst forth again, laid siege to Rome, and ravaged all the surrounding country. The pope again supplicated Pepin, who crossed the Alps, and shut Astolphus up in Pavia. Astolphus was preparing for a new war, but fell from his horse while hunting, and died 3 days afterward without leaving male heirs.

ASTON, LOUISE, a German authoress, the daughter of a Prussian clergyman, and celebrated for her zeal for the so-called emancipation of woman. She early displayed the energy of her character both by marrying, while extremely young, a gentleman of English descent, named Aston, who was at the head of a thriving industrial establishment of Magdeburg, and by resolutely divorcing herself from him, after she had ascertained that he had not any sympathy with her reformatory aspirations. Two years after the divorce, they were re-married, but again separated. Soon after this final separation from her husband, she made her appearance in the streets of Berlin in masculine costume and with a cigar in her mouth. This gave offence to the police, and she was requested to leave the city, which she did; but, in 1848, she came back. Mrs. Aston is not only what is commonly called a strong-minded woman, but is at the same time a person of considerable literary attainments. Her published works are numerous, consisting of novels, poems, and autobiographical sketches. She showed her benevolence by the self-sacrificing assistance which she gave, as nurse, to the sick soldiers in the Schleswig-Holstein lazaretto. In 1851 she returned to the sphere of domestic life by marrying Dr. Meier of Bremen.

ASTOR, or HASARA, a river of central Asia.

joining the Indus north of the Himalaya mountains. Its general course is north-west. A fort of the same name is situated on it.

ASTOR, JOHN JACOB, a merchant of the city of New York, born in Germany, in the village of Waldorf, near Heidelberg, July 17, 1768, died in New York, March 29, 1848. He was the youngest of the 4 sons of a peasant, and his boyhood was passed in the healthful labors and simple customs of a farmer's life. He was trained from a child to rise early and to devote a part of his first waking hours to reading the Bible and prayer-book, practices which he cherished through life. His brothers seem to have shared his spirit of enterprise and energy, for 2 of them preceded him in passing beyond the Black forest and the Rhine, one of them to establish himself as a maker of musical instruments in London, and the other to settle in America. At the age of 16 he accepted an invitation from his brother in London to join him in his business, and with adventurous zeal he bade adieu to his parents, walked to the coast of Holland, and embarked in a Dutch smack. After reaching his destination he showed the elements of his character and the value of his early discipline by rising invariably at 4 o'clock, and by performing his duties in the most exemplary manner. But he looked forward to even a wider field of enterprise than London. At the age of 20 years, possessing a manly person and address, he became one of the pioneers in the great emigration to the West. In the year 1783, a few months after the recognition of the independence of the United States by Great Britain, he sailed for Baltimore, taking with him a few hundred dollars' worth of musical instruments to dispose of on commission. The vessel had reached Chesapeake bay when a storm threatened shipwreck. Astor surprised the passengers by appearing upon deck arrayed in his best suit, but gave a satisfactory answer to their inquiries. "If," said he, "I save my life it shall be in my best clothes; if I perish it is no matter what becomes of them." On the voyage he made acquaintance with a shrewd and communicative furrier, in accordance with whose suggestions he exchanged his musical instruments in New York for furs, with which he immediately hastened back to London, where he disposed of them to great advantage. He prepared again to cross the Atlantic and to devote himself systematically to the fur trade. In London he studied the continental fur markets, and made himself familiar with every variety of the article, and on returning to America established himself at New York, where he afterward always resided. Consignments from his brother doubtless assisted him in his first struggles for fortune, but his energy was chiefly devoted to the fur trade, and in pursuing his business he occasionally visited London, and more frequently Montreal and the distant trading posts in Canada. When the treaty negotiated by Mr. Jay, in 1794, removed the obstructions which had previously existed to the exporting

of furs, he was prepared to take advantage of it by his extensive acquaintance with the trappers and traders of the West and North, and he was soon able to reap a double profit by sending his furs to Europe and the East in his own ships, which brought back cargoes of foreign produce to be disposed of in New York. His business became extended till it embraced markets in every quarter of the globe, yet so exact was his acquaintance with these markets, and so wide was the grasp of his mind, that he was able to guide the action of his supercargoes and captains by the most minute instructions. At this time, while his commerce covered the seas, he always rose early and left his business at 2 o'clock, P. M., and was accustomed to show his workmen occasionally that he could equal the best of them in sorting and beating furs. At the beginning of the century he was worth \$250,000, the result of only 16 years of business life, and he now began to revolve colossal schemes, not only of trade but of colonization—not only of supplying with furs all the markets of the world, but of planting towns and spreading civilization in the wilds of the western continent. He obtained the patronage of the government for a plan of sending regular supply-ships to the Pacific coast, especially to the Russian possessions on that coast, and, in opposition to many wealthy corporations, began to put in effect the great though unsuccessful scheme which occupied so many years of his life. It was his aim to organize the fur trade from the lakes to the Pacific by establishing numerous trading posts, making a central depot at the mouth of the Columbia river, and then, by obtaining one of the Sandwich islands as a station, to supply the Chinese and Indian markets with furs sent directly from the Pacific coast. In prosecuting this gigantic scheme it is said that he expected only outlay during the first 10 years, and unprofitable returns during the second 10, but after that a net annual result of about \$1,000,000. After hearing of one of the first and most fatal disasters which befell the series of expeditions that he sent to Astoria, he went in the evening to the theatre, showing only his accustomed cheerfulness. The fur trade was not the only source of his fortune. He early began to make investments in real estate in New York, and in the rapid growth of the city it was said that some portions of his property centupled on his hands, and he erected numerous handsome private and public buildings. His fortune, the largest ever accumulated in America, has been estimated at not less than \$20,000,000. During his whole career he hardly made a misstep through defect of his own judgment, and his memory retained for years the minutest details. He was in the constant habit of riding for pleasure and exercise, and until his 55th year was customarily at his office before 7 o'clock in the morning. He lived during nearly a quarter of a century in retirement, in the society of his family and of eminent practical and literary men, his mind retaining its vigor after his bodily

strength had become greatly enfeebled. He gave many liberal donations during his lifetime, and his will contained numerous charitable provisions. One of these was \$50,000 for the benefit of the poor of Waldorf, his native village, a sum which the grand duke of Baden has judiciously applied for the instruction of young persons who would otherwise have been destitute of educational privileges. The crown of his beneficence is, however, the Astor library in the city of New York, the fruit of a long-cherished purpose, and of much consultation in the latter part of his life. (See "Life of Astor," by David Ralph Jaques, in Freeman Hunt's "Lives of American Merchants," New York, 1858.)

ASTOR LIBRARY. This institution owes its existence to the liberality of John Jacob Astor, who bequeathed \$400,000 "for the establishment of a public library in the city of New York." By a provision of the will, the government of the library was vested in 11 trustees, in whose keeping were placed all the property and effects of the institution; in them existed all power to invest and expend the funds, and to manage the affairs of the library. The first trustees were named by the testator, and consisted of the following gentlemen: Washington Irving, William B. Astor, Daniel Lord, jr., James G. King, Joseph G. Cogswell, Fitz-Greene Halleck, Henry Brevoort, jr., Samuel B. Ruggles, and Samuel Ward, jr.; also, the mayor of the city of New York, and the chancellor of the state, in respect to their offices. By a subsequent codicil, Charles Astor Bristed, his grandson, was also appointed a trustee. A provision of the will also designated, as the land whereon to erect a suitable building for the purposes of the library, a lot situated upon the east side of Lafayette place, measuring 65 feet in front by 120 deep. As early as the year 1839, Mr. Astor had purchased a number of volumes, aided by Dr. Joseph G. Cogswell, with the ultimate intention expressed in his will. In May, 1848, the trustees of the library met for the first time, and in accordance with the known desire of Mr. Astor, appointed Mr. Cogswell superintendent, a position which he still occupies. In the autumn of the same year, Dr. Cogswell sailed for Europe, authorized to purchase books to the amount of \$20,000. During an absence of 4 months, he collected 20,000 volumes, which were temporarily placed in a building rented for the purpose. A second and third visit by the superintendent, increased the number of volumes to 70,000, with which the present building was opened, Jan. 9, 1854. The Astor library is built in the Byzantine style of architecture, richly ornamented with brown stone mouldings, and an imposing entablature. Its dimensions are in accordance with the directions of the will, its height being about 70 feet. The library room is 100 feet in length by 64 in width, and 50 in height; this is reached by a flight of 86 marble steps. The lower rooms are used for the deposit of public documents, for the meeting of the trustees, &c.

Since the erection of the building, the number of volumes has increased to nearly 100,000, quite filling the library. These are arranged in classes, that being considered the most convenient and practicable mode. In the selection of the books, the superintendent, upon whom has devolved the whole of this labor and responsibility, has chosen only such works as his experience, and knowledge of bibliography taught him would be most useful to a young and growing country. Particular attention has been paid to the department of technology, in which the library is unusually rich. Bibliography has also received a large share of Dr. Cogswell's attention, his own private collection having been early presented to the library. It is designed to render the department of American history as full as possible, as this class of works are daily becoming more and more required by the American public. In linguistics, particularly oriental, the Astor library is unsurpassed by any in this country. The natural sciences are also fully represented, comprising about 7,000 volumes, many of them rare and costly. In Jan. 1856, the present building having become filled, and the necessity for more room obviously existing, Mr. William B. Astor, eldest son of the founder of the library, made a donation to the trustees of a piece of land immediately adjacent to the present building, embracing an area 80 feet wide, and 120 feet deep. Mr. Astor also announced his intention of erecting a building similar to the present, and to be adapted to the same purposes. Since that date the building has rapidly advanced toward completion, and will probably be ready for the reception of books some time during the year 1858. The whole edifice, when completed, will be capable of containing 200,000 volumes. The catalogue of the Astor library, which has been in progress ever since it was opened, has been a labor of difficulty, and requiring and receiving the most careful attention. It will comprise, when finished, 8 octavo volumes, numbering upward of 500 pages each, 4 volumes being devoted to an alphabetical index of authors' names, and 4 to a carefully arranged catalogue of subjects. It will form, when completed, perhaps the most perfect printed library catalogue ever published. The first volume is already printed, and the others are rapidly passing through the press.

ASTORGA, a city of Leon, in the North of Spain, so called after the Astures, the ancient inhabitants, whose name survives in Asturias. Pop. about 5,000. There is an ancient Gothic cathedral with a high altar of great beauty, the work of Gaspar Becerra. Astorga was taken by Junot in the peninsular war, and retaken by the Spanish general Santocildes. Napoleon made Astorga his head-quarters in his pursuit of Sir John Moore.

ASTORGA, EMANUELE, baron d', a musical composer, born in Sicily, about 1680, died about 1755. He lived for a time at the court of the duke of Parma, whence he went to that of Le-

opold I., emperor of Germany, and afterward travelled over a large part of Europe, living for a year or two in England, and remaining for a longer or shorter time at Lisbon and other places. His principal work is his *Stabat Mater*, the MS. of which is still preserved at Oxford, and of which a large portion is published in Latrobe's "Selection of Sacred Music." His opera of "Daphne" was also highly approved at the time, and his cantatas are elegant and graceful compositions.

ASTORIA, a town, once of great importance, in Oregon territory, near the mouth of Columbia river. It was for a long time the depot of the fur trade for all the country west of the Rocky mountains. It is now the principal place in Clatsop county, and is a port of entry. The difficulties in the entrance to the Columbia have, however, opposed a great impediment to the development of its property, while the more general settlement of the country has caused new towns to surpass it. Its population has been computed at about 800. Its name was given to it in honor of John Jacob Astor. Its early history is described by Washington Irving in his "Astoria." The town dates from about 1810.

ASTORINI, ELIA, an Italian theologian, born in 1651, died 1702, the founder of the academy of the *Fisiocritici* at Sienna, and the author of various ecclesiastical writings, left Italy at a very early age, and passed some time at Zurich and Basel, in Swabia, and finally at the university of Marburg, in Germany, of which he was appointed vice-chancellor. In 1686 he graduated as physician at Groningen, but the religious excitement in the Netherlands induced him to return to Rome, where he received the appointment of general predicator at Pisa. He was also for some time professor of mathematics at Sienna, and subsequently became the general commissioner of the monastery of Cosenza. He died in a little place called Terra Nova di Tarasia.

ASTORPILCO, an illegitimate son of Francisco Pizarro and Doña Angelina, daughter of Atahualpa, the last of the Incas of Peru. He died in 1583, but descendants of his name live to the present day in the Peruvian town of Caxamarca, and when Humboldt visited that country he was waited upon in his visit to the old palace of the Incas of Peru by a youth of 17 years, of the same family of Astorpilco, and, consequently, a scion, on the maternal side, of the royal house of Atahualpa. Humboldt gives a melancholy account of the destitute position of this once illustrious family, but while they are on the verge of starvation they still firmly believe in the vast treasures buried under the ruins of the royal palace.

ASTRÆA (Gr. *αστρον*, a star), a genus of radiate animals of the polypi family, which attach themselves to marine bodies, and are often found collected together into a globular or hemispherical mass, known as one of the forms of coral. The upper surface of these

masses is entirely covered with little cavities of stellar form, each one of which is the receptacle of a polype, and in the centre is its mouth, from which radiate its numerous tentacula, or arms. These cavities are either in close contact, or separated by intervening spaces, and this feature is made the basis for dividing the genus into two sections, the first of which is represented by the common East India species, *A. faveosa*; and the other by the *A. rotulosa* of the West Indies.

ASTRAGAL. I. In Greek antiquity, the bone by which the foot is joined to the leg, the knuckle-bone, or dib, of sheep and goats. What in England is called the game of "dibs," was played with astragals by the women and children of Hellas. A painting by Alexander, of Athens, found at Resina, represents 2 women occupied with this game. One of them having thrown the bones upward into the air has caught 3 of them on the back of her hand, and let 2 fall. Five dibs were employed as in our own day. Cupid and Ganymede are represented playing at dibs on Mount Olympus. II. These astragals were also used as dice by the Greeks, and marked 1 and 6 on one side, 3 and 4 on the other. The 2 ends were left blank. III. From the shape of the sheep-bone, the term astragal was applied by the Greeks to a moulding in architecture, characteristic of the Ionic order. This moulding preserved its name, notwithstanding alterations in its structure which destroyed its original resemblance to the astragal bone.

ASTRAKHAN, or ASTRAKHAN. I. An ancient khanate of the Golden Horde of Tartars, embraced Astrakhan proper, Sanatoff, Orenburg, and the Caucasus. It was conquered or annexed to Russia by the czar Ivan Vasilewitch, in 1554. The present government of Astrakhan, in south-eastern Russia extends over about 60,000 square miles between the governments of Sanatoff and Orenbourg, the land of the Cossacks of the Don, the Caucasus, and the Caspian sea. It also extends along both sides of the river Volga, by which it is divided into 2 nearly equal parts. The land is mostly flat, a salt steppe, with frequent salt lakes and swamps, the soil meagre and unproductive, except on the banks of the rivers, and, above all, of the Volga. The climate and vegetation partake of the extremes of northern winter and southern summer. Thus, on good lands, are produced the mulberry, the vine, almonds, peaches, maize, sesame, and even cotton; and among the quadrupeds, antelopes and camels. The population, about 290,000, is composed of Russians, Armenians, Cossacks, Germans, Hindoos, Tartars, Kirgheez, Calmucks. The 3 last are nomads. The Calmucks occupy a separate region called Oblast, and are organized under their own chiefs and laws, printed by the Russian government in the Calmuck language. II. The chief city of the government of the same name, is situated on an island formed by one of the branches of the Volga, about 80 miles from its mouth. The

houses are partly of brick, partly of wood, and the population fluctuates from 20,000 to 50,000, composed of all nations of Europe and Asia, and of nearly all creeds. Thus there are mosques for the Mohammedans and sanctuaries for the Hindoos, as well as Christian churches. There is a naval academy, a high school, or gymnasium, and district and grammar schools, a school and printing-office for the Calmuck language. About 100 manufacturing establishments produce cashmere shawls, silk and cotton fabrics, furs, dyes, powder, and salt. The salt-works are very extensive. Astrakhan is the great entrepot of the Russian oriental trade, and the raw produce from the remoter regions, consisting principally of hides, sheepskins, and grease, is brought there. It is, accordingly, one of the most flourishing Russian commercial cities. Its fisheries in the Volga and the Caspian sea are very extensive. It is now likewise one of the principal navy depots for the Caspian sea, the lakes and rivers of central Asia. Vessels and steamers are constructed and armed there for the Russian squadrons on all these waters. III. Astrakhan is also the name of a very fine kind of wool or fur, from the so-called sheep of Bokhara, a breed peculiar to Bokhara, Persia, Syria, Palestine, and Egypt.

ASTRAL SPIRITS. The conception of spirits of the stars has come to us from the Persian fire-worship through Judaism and Greek paganism. Every star is supposed to be animated by a spirit. The fancies connected with the sphere and character of these spirits, vary much with the age and country of the demonologist who treats of them. Paracelsus gives every man and woman one such spirit with whom the individual soul is in close connection, and who lives for a short time after the human being with whom it is in connection has died. They flourished under the Christian system. The demonologists of the middle age represent these spirits sometimes as hanging between heaven, earth, and hell, and belonging to neither, sometimes as fallen angels, and sometimes as souls of the deceased. Free scope was always left to the imagination of those who dealt in these wonders. In the 15th century when demonology as an intellectual pursuit became perfected, the astrals were finally enrolled as wicked and evil-doing spirits. The French socialist, Fourier, in his cosmogonical speculations, also supposes the heavenly bodies to be endowed with intelligent individual souls of an order superior to humanity.

ASTRINGENTS (Lat. *stringo*, to contract, or bring together). A class of medicines used either internally or externally, for contracting together the animal tissues and vessels in order to prevent profuse discharges, and also to coagulate the fluid matters. They act topically and in a less degree by sympathy upon other parts; but upon what principle they act is no better understood, than it is how cold applied to the body produces similar effects. Their action is not limited to the tissues of liv-

ing bodies, but is effective upon the dead fibre. It is the astringent property of tannin in oak and hemlock bark and other vegetable substances, which renders them adapted for the hardening of skins by the tanning process. A great variety of vegetable matters contain tannin, and are consequently possessed of astringent properties. The mineral acids and some salts of lead, silver, zinc, iron, and copper, as also carbonates of lime and magnesia, the former in the form of chalk, alum, and acetic acid, are all powerful astringents. This class of medicines applied topically to stop discharges, such as the flow of blood, are called styptics. In the dyeing process the mordants used to fix the colors are astringents, which act by combining with the coloring matters, and forming with them insoluble compounds. Gall nuts and salts of alumina and acetates are common varieties of astringents used for this purpose.

ASTROGNOSY (Gr. *αστρον*, a heavenly body, and *γινωσκω*, to know), the science which treats of the constellations, and the rank of the stars. The best means of gaining this knowledge is by a course on the celestial globe.

ASTROLABE, an old astronomical term, generally applied to a quadrant by which the aspects of the planets were measured, and the earliest measurement of the positions of the fixed stars made.

ASTROLOGY, a system of rules for discovering future events by studying the positions of the heavenly bodies, which was received for many centuries as a true and most important science, but has now lost all credit in civilized nations. It is still practised by a few votaries in western Asia. Astrology was divided into 2 kinds: judicial, by which the fate and acts of nations might be foreknown; and natural, by which the events of brute and inanimate nature—such as the changes of the weather, &c.,—might be predicted. The etymological meaning of the word astrology is almost the same as that of astronomy; and there was no clear distinction made between the 2 branches until the time of Galileo. Previously, most students of the movements of the heavenly bodies had been more or less astrologers. The invention of the telescope, and the establishment of the Copernican system, opened an attractive field for study, and laid the foundation of a true scientific knowledge, while it absorbed the attention of those who might otherwise have devoted themselves to the vain superstition of reading the future in the stars. Ancient civilization saw nothing absurd in the claims of astrology. Prophetic power was supposed to be common. The people imagined that indications of coming events were abundant on all sides of them; and it was presumed that these indications might be fully understood by those who devoted their lives to the study. Augurs and diviners were numerous and respectable; they were classed with physicians and priests; and their scientific rules were supposed to be precise and trustworthy. Omens

were studied by all; and he who spoke of them with ridicule or scorn was looked upon as impious and blind to his best interests. Where such opinions prevailed, astrology was respected as the most abstruse of sciences, and the most trustworthy means of foreknowing the future. Our information in regard to astrology, in ancient as well as in modern times, is not very complete. Having lost its credit as a branch of valuable knowledge, it has been overlooked by historians, or has been passed by with a few words. There was some reason for this mode of treatment, however, in the subject itself; for astrology, although many books had been written upon it—some of them very methodical and precise works—was yet treated so differently by different authors, that a description of their rules would necessarily have been tiresome. Astrology was much practised in imperial Rome. It was forbidden by Augustus, and the edict was republished by 4 or 5 of the later emperors, but was, apparently, not much regarded. Tiberius studied and practised astrology. The Saracens in Spain held star-divination in great respect, and by their influence it was made popular through the rising Gothic nations of western Europe. In the middle of the 18th century, Alfonso the Wise, king of Castile and Leon, made himself not less famous by his astronomical tables than by his code of the *Siete Partidas*; and the astronomical tables were intended principally for astrological purposes. Thus astrology fostered astronomy as alchemy fostered chemistry. Astrology continued to increase in credit till the middle of the 16th century, was still practised at European courts at the end of the 17th, and had a few votaries till the end of the 18th, even in England. It was in high repute at the court of Catharine de' Medici; it was spoken of, by the great Kepler, as a true science; and Lilly, an English astrologer, was called before a committee of the house of commons, in the reign of Charles II., to give his opinion of future events. Lilly was the last of the famous astrologers; the 18th century brought clear scientific ideas, and a cold skepticism, which would even doubt its own eyes when they witnessed phenomena inexplicable by clear rules. As stated before, the rules of the astrologers were different; but the general method of procedure in finding the fate of any man or enterprise, was to draw a horoscope, representing the position of the stars and planets, either in the whole heaven, or within one degree above the eastern horizon, at the time of birth of the individual, or the inception of the undertaking. Arbitrary significations were given to different heavenly bodies, as they appeared singly or in conjunction; and according to these significations, the horoscope was interpreted. The presence of Venus foretold love; Mars, war; Jupiter, power; the Pleiades, storms at sea; &c. The system of a reputable astrologer in the 16th century required years for its mastery; and absurd as its fundamental principles now

appear, its details were not inconsistent with each other, and the whole system has a completeness which appears very singular in a scheme so visionary.

ASTRONOMY (Gr. *αστρον*, a heavenly body, and *νομος*, law), is the science which treats of the heavenly bodies, in their relations to each other and to the earth. The earth is nearly spherical, being about 7,926 miles in diameter at the equator, and 7,899 from pole to pole. It rotates upon its shortest diameter, with a perfectly uniform motion, once in 23h. 56m. 4s., making what is called a sidereal day. At the same time, it revolves about the sun with nearly uniform motion, occupying in its revolution 365d. 5h. 48m. 47.8s. It presents the same side to the sun, on an average, once in 24h., an hour being simply the 24th part of the average solar day. The rotation of the earth upon its axis causes all the heavenly bodies to appear to rise in the east, and set in the west, that is, to rotate about the points in the sky toward which the axis of the earth is directed; in other words, the points which would be directly overhead at the poles. The axis of the earth always points to nearly the same spot among the stars, showing that it remains nearly parallel to itself. But as it is not perpendicular to the path in which the earth is moving round the sun, this fixedness of direction in the axis causes our globe to present itself to the sun in its daily rotation, differently at different seasons of the year, turning the two poles alternately more nearly toward the sun. This causes the sun to appear to us to rise further north in summer, further south in winter, but his course from sunrise to sunset on any one day, is very nearly parallel to his course on any other day. Hence, when he rises further north he remains longer above the horizon, and shines down more nearly perpendicularly at noon, two effective causes of the warmth of summer. The stars move over, from rising to setting, somewhat faster than the sun, that is to say, the revolution of the earth about the sun causes the sun to appear to move round among the stars, and his apparent path among the stars is called the ecliptic. The circle in the heavens, midway between the poles, that is, between the points overhead at the earth's poles, is called the celestial equator. The equator crosses the ecliptic at an angle (about $23^{\circ} 27' 36''$) which is called the obliquity of the ecliptic. This angle produces seasons exactly adapted to existing plants and animals. Were it materially greater or less, the whole organic life on the planet would need to be different. The times when the sun apparently crosses the celestial equator, in March and September, are called the equinoxes, because at that time the day is equal to the night over the whole globe. The times when he arrives, in June and December, at his most northern and southern limits, are called solstices, because the sun (Sol) appears to stand for a few days, that is, not to go north or south. The earth's orbit is an ellipse, with the

sun in one focus, so that we are about 8 millions of miles nearer to him at our perihelion, in the northern winter, than at our aphelion—our average distance being about 95 millions of miles. The sun's diameter is about 111 times that of the earth, so that he is 1,400,000 times as large as the earth, though his weight is only 350,000 times that of our planet. The moon bears somewhat the same relation to the earth that the earth does to the sun. She moves about us in an ellipse, her average distance being 238,650 miles. Her diameter is 2,160 miles. Her eclipses take place at full moon, because it is only then that she can ever pass through the shadow of the earth. She produces eclipses of the sun at new moon, because it is only then that her shadow can fall upon us. Her attraction causes the phenomenon of the tides, which are, however, greatly modified by other circumstances. The moon is held in her orbit simply by her weight, that is, the attraction of the earth, and the earth is held in its orbit simply by its weight, the attraction of the sun. No other appreciable force is known to influence the motion of these bodies. Bodies bearing a relation to the sun similar to that of the earth are called planets; those holding a position similar to that of the moon are called satellites. The planets known to the ancients were Mercury, Venus, Mars, Jupiter, and Saturn. To these the moderns have added Uranus, the asteroids, and Neptune. Mercury's distance from the sun varies, in different parts of his orbit, from 29 to 44 millions of miles. He is occasionally seen, just after sunset, in the west. The distance of Venus from the sun is about 69 millions of miles. She is the brightest of the planets. Mars is, in perihelion, about 182 millions, in aphelion 159 millions of miles from the sun. The group of the asteroids lie scattered between 200 and 300 millions of miles from the sun. Jupiter, whose diameter is more than 11 times that of the earth, is about 496 millions of miles from the sun, and is attended by 4 moons, whose eclipses have been of great value in determining longitudes at sea, and have rendered to physics the memorable service of betraying the motion and velocity of light. These eclipses appear to take place 16m. 27s. later when the earth is on the opposite side of the sun from Jupiter; the light being then obliged to cross the orbit of the earth, and thus travel 190 millions of miles further before reaching us, than it does when we are in the part of our orbit nearest to Jupiter. The planet Saturn, at the distance of 909 millions of miles from the sun, is accompanied by a system of rings of fluid matter, held in their position about the planet by 8 satellites. Uranus was discovered by Herschel, in 1781. Its distance from the sun is 1,828 millions of miles, which makes its time of revolution round the sun about 84 years. It is accompanied by 6 satellites. The planet Neptune was first seen in 1846, and one satellite was soon discovered. The existence of Neptune had long been suspected, from the mo-

tions of Uranus, which indicated an exterior attraction, and its place and magnitude were calculated by Adams, of Cambridge, England, and by Leverrier, of Paris, before it had been seen. Its distance does not, however, agree with their calculations, as it is but 2,862 instead of 3,500 millions of miles from the sun. This discrepancy does not arise from any error in their calculation, but from the fact that there were two places in which a planet might have been placed to produce the observed disturbances of Uranus. Leverrier and Adams calculated one place correctly, but it so happened that the planet occupied the other spot. In addition to this train of planets, the sun is attended by a vast host of comets, which move about him at all distances, and in all directions. The comets and planets, however, all agree in these three particulars: they move in ellipses, with the sun in one focus; a line drawn from either of them to the sun would have an angular velocity at the sun, that is, alter its direction in exact proportion to the nearness of the body to the sun; and if the times of revolution of any two bodies round the sun be each multiplied by itself, and the distances of the same bodies from the sun be each multiplied twice by itself, the resulting numbers in the first case will be in the same ratio to each other, as the resulting numbers in the last case. These three facts were discovered by Kepler, and are called Kepler's laws. From these it is easily shown, by higher mathematics, that the only force acting on the heavenly bodies is an attraction toward the sun, proportioned in its intensity to the square of the distance from the sun. It is further shown, by simple arithmetical calculations, that this force is the very same as that which causes an apple to fall to the ground. A stone falls 193 inches in a second, and the moon in going round the earth, at the distance of 238,650 miles, must bend from a straight line .058 of an inch every second. But the moon is 60 times as far from the earth's centre as the stone is, and 193 divided by 60 times 60 gives .058. This discovery of the identity of the force of gravity, or the weight of bodies on earth, with the cosmical force that carries the heavenly bodies in their orbits, is due to Sir Isaac Newton. The bodies already mentioned are all that are known to belong to the solar system, although there are strong probabilities that our own planet, the earth, is surrounded with a vast group of minute satellites, rotating about the earth at a less distance than that of the moon, a discovery of the Rev. George Jones, U. S. N. This asteroid group of terrestrial moons is best seen on fine evenings in February and March, as a faint cone of light, stretching up from the west, which has been called the zodiacal light.—The fixed stars are at vastly greater distances from us than any parts of the solar system, and are probably of the same nature as the sun itself. The stars appear to lie in a flattened cluster, with our solar system somewhere near the middle of it. The stars in

the edge of this cluster, of course, appear to us crowded, and the more distant ones are beyond the reach of unassisted sight, their light blending into a whitish cloud, called the milky way. All the stars appear to be revolving about a central point in the constellation of the Pleiades. The change of apparent position in a heavenly body, caused by our moving our position, is called parallax. For the bodies of the solar system there is a daily parallax, arising from our rotation, about the axis of the earth. For the stars the daily parallax is insensible, and even the parallax caused by our moving around the sun, in the immense orbit of 191,000,000 miles in diameter, is so small, that it has with difficulty been measured in a very few stars. Variable stars are those which go through regular periodical changes of brilliancy, from some unknown causes. There are several well-attested instances of the appearance of temporary stars, the permanent accession of new stars to the sky, and the permanent loss of stars which have become invisible. Double stars are simply those which appear to be one nearly behind another. Binary stars are those which are actually near each other and revolve about their common centre of gravity, as the earth and moon about theirs. Nebulæ are clusters of stars, which require very high powers of a telescope to resolve into stars; that is, under low powers of a telescope they appear like portions of the milky way. It is usually supposed that they are large clusters entirely distinct from that in which our solar system is placed, and, if so, at a distance which is incredibly great.—The foregoing remarks give a bird's-eye view of the field of physical astronomy. With this must be combined spherical astronomy, which treats simply of the apparent motions of the heavenly bodies in the sky. The heavens appear like a hollow sphere; one-half, above the horizon, being alone visible at one time. The points over the earth's poles are called the poles of the heavens; they appear stationary, all other parts appear to rotate daily, causing the stars to rise and set. In addition to this, the bodies of the solar system appear to move among the stars on the interior of this sphere. The annual path of the sun is called the ecliptic, and a belt of 8° in width on each side of the ecliptic is called the zodiac, from the pictures of animals (*ζῳα*) with which it was decorated by the fancy of old astronomers. The apparent motions of all the principal planets (*πλανῆτες*, wandering) is confined to the zodiac, which is divided into 12 equal parts, called signs: Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius, and Pisces. The comets (*κομήτης*, long-haired), however, exceed these limits. The apparent motion of the planets is exceedingly irregular, being at times much slower and even backward. When, for instance, we sweep by the planet Mars, and he appears on the meridian at midnight, he will be seen to move westward among the stars,

although, of course, his real motion is eastward. It is the business of spherical astronomy to predict, with accuracy, all the apparent motions of all the heavenly bodies, and thus foretell the times of their rising and setting, and other remarkable phenomena; such as eclipses, when the shadow of one heavenly body falls upon another; occultations, when one heavenly body passes behind another, so as to be hidden from our sight; and transits, when a smaller body passes between us and a larger body, apparently creeping across its face. In the predictions of spherical astronomy, the places of the heavenly bodies are given in right ascension and declination; declination being distance north of the celestial equator, and right ascension being distance east of a meridian, or north and south line, drawn through the first point of Aries, where the ecliptic crosses the equator. For a popular description of the place of a heavenly body, use is made of the constellations, which are very ancient, and somewhat fanciful groups of stars, into which the whole heavens are supposed to be divided.—The history of astronomy is more full and interesting than that of any other science. It cannot be doubted that this science has been one of the greatest means used in the intellectual development of our race, and that it is to the scientific ability developed in the pursuit of astronomy that we owe the origin of all other physical sciences. The movements of the heavenly bodies affect so intimately the welfare of man, that there is scarcely a nation whose earliest traditions do not prove that men began to observe the sun, moon, and stars, as soon as they began to live. It was, however, in Greece that astronomy, as all other sciences, first took a scientific form. The knowledge possessed by the Chaldeans, Egyptians, Indians, and Chinese, seems to have been purely that of observation. The Chaldeans had discovered that eclipses of the sun and moon return at nearly the same times of the year, after an interval of 18 years, and had observed the principal phenomena of the apparent rotation of the heavens. The Egyptians added to this a knowledge of the length of the year, at least so far as to call it 365½ days. The knowledge of astronomy possessed by the Chinese was but little greater. They had determined the obliquity of the ecliptic. The knowledge ascribed by some authors to the Indian nations was probably derived from comparatively modern sources. The astronomical knowledge of all nations in early periods has been magnified by tradition. Substantial proofs of accurate astronomical knowledge are wanting in the case of every nation except the Greeks. Thales, 640 B. C., had undoubtedly many clear and accurate notions. His pupil, Anaximander, born 610 B. C., invented geographical charts, and first announced the sublime idea of the plurality of worlds. Within a century Anaximenes constructed sundials, and Pythagoras, in his early youth a disciple of Thales, gave to his disciples a system

of the universe nearly similar to that of Copernicus. In the year 433 B. C., Meton and Euctemon introduced the Metonic cycle, which for ages furnished the means of calculating the age of the moon and recurrence of eclipses. Plato, by his diligent cultivation of geometry, rendered very essential service to the progress of astronomy, not only in his own, but in all future ages. Astronomy did not, however, begin to be cultivated as a professional science, until the establishment of the museum at Alexandria by Ptolemy Philadelphus; an institution which survived for 9 centuries. The discoveries of this Alexandrian school, both in astronomy and in geometry, are too numerous for us to give in detail. We cannot, however, omit to mention that Eratosthenes, born 276 B. C., first measured the size of the earth, by that process which is to the present day considered the best: the measurement of an arc of the meridian. But men of other schools were not idle. Hipparchus, born 140 B. C., verified, at his private observatory at Rhodes, the results of the Alexandrians, and then himself pushed on until he had made more observations and discoveries than any of the ancient astronomers. Stimulated by the sudden appearance of a new star in the heavens, he formed a catalogue of 1,080 stars, and discovered the precession of the equinoxes. His astronomical studies led him also to some valuable results in pure mathematics. Indeed, the whole history of these 2 sciences to the present day shows that while astronomy can make no progress without *mathesis*, *mathesis* would have advanced much more slowly but for the stimulus given to it by the problems of astronomy. Nearly 3 centuries after Hipparchus, Ptolemy appeared at Alexandria, and earned a high rank, not only by his own discoveries and inventions, but by his valuable history of the labors of his predecessors. This work was for a long time the great standard of astronomical knowledge, and is still extant in Greek, in Latin, and in Latin translated from the Arabic. The Arabic name *Almagest*, corrupted from the Greek for "the greatest," is the ordinary title of Ptolemy's *Μεγάλη Συναγωγή*, or "great composition." On the death of Ptolemy, astronomy ceased to be cultivated among the Greeks. The Arabians, Persians, and Tartars, preserved a knowledge of that which had been done in Alexandria, and made many valuable observations, but added nothing to the theoretical science. In the 13th century, the science began to revive in Spain; and in the 15th century, Purbach at Vienna, and his celebrated scholar, John Müller, better known by the name of Regiomontanus (Latinized from his birthplace, Königsberg), firmly established it among the Germans. Copernicus, born 1473, was the first of modern astronomers to restore the Pythagorean view of the universe, namely, that the stars and the sun are at rest, the planets revolving about the sun, and the moon about the earth. Tycho Brahe, born 1546, did not accept the views of Copernicus, but he was a most indefatigable

and skilful observer, and being possessed of ample fortune, manufactured costly and accurate instruments. His accurate observations furnished his disciple, Kepler, born 1571, with the means of proving those three great truths called Kepler's laws, which are in themselves the sum of all the observations that have ever been made upon the heavenly bodies. They are equivalent, as mere expressions of the facts of motion, to Newton's law of gravity, and are competent to explain every motion which gravity itself can explain. The Italian, Galileo, born 1564, by his invention of the telescope, and his discovery of the value of the pendulum as a recorder of time, rendered also invaluable services to astronomy. But equally valuable and wonderful was the invention by Napier, or Neper, in 1614, of logarithms, without which astronomical calculations, of the delicacy and intricacy requisite in the modern state of the science, would be absolutely impossible. Huyghens, born 1629, aided astronomy by his improvement in telescopes, clocks, and chronometers. Cassini, born 1625, was an indefatigable and accurate observer. Newton, born 1642, deducing the law of gravity from Kepler's laws, and inventing the mathematical science of fluxions, earned the highest place among the list of theoretical astronomers. Flamsteed, Halley, Bradley, in England, Lacaille, and the later Cassinis in France, pushed observations to greater degrees of accuracy. With Leibnitz's calculus, the same in spirit, but different in form, from Newton's fluxions, the mathematicians commenced that series of brilliant investigations into the laws of attraction, which rendered Clairaut, born 1718, D'Alembert, born 1717, Euler, born 1707, Lagrange, born 1736, and Laplace, born 1749, so glorious. Among these, Euler and Lagrange were undoubtedly men of the highest genius, but Laplace, by the multiplicity, accuracy, and value of his labors, has gained an equal fame. Astronomy in the 19th century has continued to advance. Telescopic discoveries continue to be daily made, and living analysts are equal in their achievements to the illustrious men of the 18th century. Herschel's discovery of Uranus in 1781 was an accident, but that of Neptune in 1846 was the result of calculations by Leverrier, and must be ranked among the finest triumphs of the human intellect. The discovery of so many asteroids is wholly a work of this century, begun in 1801, but chiefly carried on during the last 10 years. The measurement of the distance of some of the fixed stars from the sun was also reserved for the middle of the 19th century, to shed glory on Bessel of Königsberg. The delicacy of this operation may be inferred from the consideration that if a model of the universe were constructed on a scale of 10,000,000 miles to an inch (so that the sun should become a shot, .08 of an inch in diameter, the earth's orbit be 19 inches in diameter, and that of Neptune be less than 50 feet across), the nearest fixed stars would still be

80 miles distant. In other words, modern astronomy undertakes to determine the distance of bodies which are from 80 to 40 miles off, by measuring a base line of 19 inches, and observing the bearings of the objects taken at each end of the base. The determination of the fluidity of Saturn's ring deserves also to be ranked among the marvellous triumphs of genius. Saturn's ring, first seen by Galileo, was observed for two centuries and a quarter as a solid body. Mr. G. P. Bond, of Cambridge, Mass., having suggested that it was fluid, Prof. Benj. Peirce investigated anew the problem of the motions of a ring about a planet, and showed that a planet could not, of itself, sustain either a solid or a fluid ring, and that satellites could not sustain a solid ring under any circumstances, nor a fluid ring except under certain conditions, which are fulfilled in the case of Saturn.—Astronomy at the present day is zealously cultivated in nearly all the civilized states of the world. The observatories of Greenwich, Cambridge, and Oxford, England, and Edinburgh in Scotland, of Paris in France, of Berlin and Königsberg in Prussia, of Altona in Denmark, of Dorpat and Pultowa in Russia, of Cambridge, Mass., Washington, D. C., Cincinnati, Ohio, and Albany, N. Y., are among the most celebrated for the number and excellence of their observers and their instruments. In America, astronomy has almost begun its existence since 1848, when public interest was awakened by the sudden appearance of a large comet, and men of wealth were induced to offer to men of science the means of purchasing instruments, and maintaining observers. Previous to that period, the chief contribution which our countrymen had made to this science was the translation by Dr. Bowditch of Laplace's *Mécanique Céleste*. Since that time, three valuable observatories have sprung into vigorous life, an astronomical journal has been established, whose articles have been of the highest character, and an American ephemeris, or nautical almanac, has been started, which is confessed by high English authority to combine the excellences of all European works of the kind with peculiar advantages of its own. Our countryman, Mr. Alvan Clark, has also produced telescopes pronounced, by all competent judges, fully equal to the best in existence. The mechanical and inventive genius of Americans has also within a few years added greatly to the efficiency of methods of observation. The electric telegraph has been ingeniously employed for making instantaneous records of observations on a revolving cylinder in Cambridge, moving uniformly, being connected with the movements of a pendulum clock by an elastic axle capable of being twisted, which allows the cylinder to continue to move during the dead beat of the escapement; on a revolving disk in Cincinnati, regulated by its own inertia, as a fly wheel, and prevented from gradual acceleration, by an ingenious application, once a second, of a triangular tooth into a triangular opening

on the edge of a wheel. Two distinct methods, each cheap and simple, are also in use, one in Cincinnati, and one in Cambridge, whereby accurate measurements of small arcs are made with vastly more rapidity than by the costly and complicated heliometer, and with equal accuracy.—For a popular view of astronomy, any of the numerous elementary text-books may be taken. For a rather more complete treatise, Sir John Herschel's "Outlines" may be recommended. A thorough knowledge of physical astronomy would require an acquaintance with such works as Laplace's *Mécanique Céleste*, translated by Bowditch, Gauss's *Theoria Motus Corporum Coelestium*, translated by Commander O. H. Davis, U. S. N. (Boston, 1858), Delambre's *Astronomie*, or Peirce's "Analytical Mechanics" and "Celestial Mechanics," now in the course of publication. For the history of astronomy, see Whewell's "History of the Inductive Sciences," Grant's "History of Physical Astronomy," Jahn's *Geschichte der Astronomie*, and Delambre's *Histoire de l'Astronomie*. For full information concerning the modern history of astronomy, Zach's *Monatliche Correspondenz*, Lindemann's *Zeitschrift*, Schumacher's *Astronomische Nachrichten*, continued by Dr. Peterson, and Gould's (American) "Astronomical Journal," must be consulted; also, the French *Connaissances des Temps*, which contain Leverrier's discussions that led to the discovery of Neptune, the Berlin *Jahrbuch*, the Milan *Ephemeridi*, and the American "Ephemeris and Nautical Almanac."

ASTROS, PAUL THERESE DAVID D', cardinal archbishop of Toulouse and Narbonne, born at Tournes, in the department of Var, Oct. 15, 1772, died Sept. 29, 1851. In 1807, he delivered a celebrated sermon on the re-establishment of religion in France, in which Napoleon was complimented. As an ultramontane and utterer of the pope's bull of excommunication against Napoleon, he was arrested, and remained incarcerated in Vincennes until 1814. The educational ordinances of 1828 received his most determined opposition, as being dangerous concessions to the latitudinarian liberals. He has left the world several treatises on theological and politico-ecclesiastical subjects.

ASTRUO, JEAN, a French physician, born at Suave, in Bas Languedoc, March 19, 1684, and died May 5, 1766. He was celebrated in his day as an erudite physician and professor, the author of innumerable volumes, and a violent partisan of the exploded medical doctrines of the iatro-mechanical school of physiology. He received his degree of doctor of medicine at the age of 19; was professor of medicine at Montpellier first, then at Toulouse, and afterward at Paris. He wrote controversial works on numerous diseases, and one in which he maintained that the pestilence which broke out at Marseilles in 1720 was contagious, in opposition to the views of other medical authorities. He also espoused the cause of medicine against

surgery, in a controversy with regard to the preëminence of one over the other.

ASTURIAS, an ancient province (now Oviedo) in the north of Spain, on the bay of Biscay, which gives a title to the crown prince of Spain. In the south of the province is a range of mountains almost as high as the Pyrenees, and sometimes called the Asturian Pyrenees, but, like other mountain ranges of Spain, changing their names frequently. The loftiest of these is the Sierra Penaranda, 11,000 feet high. The precipitous bluffs of Cape Ortegal terminate this mountain range in one direction; in the other it crosses the neighboring province of Galicia; and in the gloomy rocks of Cape Finisterre, opposing their eternal barrier to the full sweep of the turbulent Atlantic, we find another terminal point. The mass is composed of calcareous rocks, marble, and hard grit sandstone, and various mineral productions are found, including copper, mineral amber, cinnamon, iron, zinc, lead, antimony, and jet. There are also beds of coal which are worked, and of which about 5,000 tons are sent into other parts of Spain. There is a hot spring at Las Caldas, near Oviedo. There are several rivers, none of considerable size, which, rising in the hills, flow north into the sea; the principal are the Sella, the Nalon, the Navia, and the Eo. Among the vegetable products are the oak, beech, and chestnut. There are various plants useful in medicine—hellebore, sarsaparilla, angelica, and dulcamara. Orchil is found on the seashore. The agricultural productions are nuts of various kinds, apples, and pears. Considerable quantities of cider are made, enough, indeed, for exportation to South America. The vine is cultivated, but not so extensively as in other parts of Spain. Indian corn is extensively grown, and a corn called spelt wheat, or *escanda*, to which the Asturians are specially partial. Oranges and lemons are grown in some parts of the province in the open air. Wild animals, including bears, wolves, and foxes, are plentiful in the mountains. The inhabitants are hardy and industrious. They are good farmers, and the numerous well-watered valleys spread all over the rugged surface of their country, give an excellent opportunity to their industry. Many of them travel to other parts of Spain and take service, for which their steady habits especially qualify them, and return in after years with their savings, to spend their lives at home. Santander is the only seaport, and the foreign commerce is insignificant, the internal communications being bad, and the few surplus productions of the province finding a market in the country; but the bold coast is everywhere indented with small bays and creeks, and the Asturians follow up fisheries, both salt and fresh water, with activity, and their commodity finds a ready market in the interior. There are a few manufactories, but of no great importance. The mountain fastnesses and defiles of Asturias afforded a safe refuge to the Gothic inhabitants of Spain, who were able to retire thither before the Mos-

lem invaders, and from thence Pelayo and his warriors continually harassed the Moors, who never succeeded in gaining a footing in the province. From a very early period the Asturians had their constitution and privileges. The Asturians boast that they are all noble, descended from the pure aboriginal Celtic stock, and have never been contaminated by intermixture with any of the foreign invaders and conquerors of the peninsula. In the Carlist struggles, the Asturians were generally faithful to the cause of Don Carlos. The principality is divided into 118 *concejos*, or communes, and 50 towns, all of which have their local government unimpaired. The population is about 500,000. The general government of the province is vested in the governor, intendant, and *audiencia*. The celebrated university of Oviedo is in this province.

ASTYAGES, the son of Cyaxares, became king of Media, according to Herodotus, on the death of his father-in-law Alyattes, in 595 B. C., and reigned 35 years. In consequence of a terrific dream, he married his daughter Mandane to a Persian noble named Cambyses, and in consequence of another dream equally alarming, he sent Harpagus, one of his courtiers, to compass the destruction of the child that was the offspring of that marriage. The infant was consigned to a shepherd to be exposed, but the shepherd, instead of fulfilling his commission, brought him up as his own son; that infant was Cyrus, the future founder of the empire of the Persians. Astyages having discovered in time that the boy still lived, caused a savage and shameful punishment to be inflicted on Harpagus, who in revenge incited Cyrus, when he had grown to manhood, to declare war against the tyrant. A battle ensued in which the Medes were defeated, and Astyages taken prisoner. Cyrus then ascended the throne, and the cruel Astyages remained a captive till his death.

ASYLUM, the Latin form of the Greek word *ασυλον*, of doubtful derivation, a place of refuge, from which persons who fled to it could not be taken without sacrilege. The Jewish cities of refuge established by Moses and Joshua, are the earliest examples of the custom of which we possess historical evidence. These were 6 in number, 3 on each side of the river Jordan. Thither the involuntary homicide might flee and escape the vengeance of the people or the relatives of the deceased. In Greece, the temples, the groves, the altars, and sometimes the precincts of the temple, were asylums to men convicted or indicted for civil or criminal offences. Yet it was lawful to surround the temple, and let the poor wretch inside die of hunger, and even in some cases to set fire to the building. In the later days of Rome, the eagles of the legions, and the statues and palaces of the emperors, were also asylums. The strongest religious sanction was thrown around these places of refuge; a whole district, it was believed, would be visited by the divine

vengeance, if it permitted a violation of the right of sanctuary, and also of the rights and privileges of the particular god or goddess at whose shrine the criminal or debtor had taken refuge. Insolvent debtors and runaway slaves resorted to them in great numbers. As law became more powerful under the Roman government, these asylums came to be regarded as nuisances and impediments to the due administration of justice. The Roman senate summoned a number of asylums to show by what warrant they claimed to possess the privilege. All those which could not show a perfect and continuous title, were abolished. At last an edict of the emperor Tiberius swept most of them away, both legal and pretended. With the barbarian incursions in the East and West, it was natural that the necessity for asylums would arise again in consequence of the general retrogression of society. The new right of asylum fell naturally to the Christian churches. Under Constantine the Great, all Christian churches were asylums; the younger Theodosius extended the privilege to all courts, gardens, walks, and houses belonging to the church. The Franks in France, and Visigoths in Spain, permitted it. Many of the popes favored this right, as it conferred great power on the clergy, who were probably in a time of savage violence the best class to entrust with the trial of causes. All convents, and even bishops' houses, became asylums. Opposed to the right were the temporal lords, the rights of whose jurisdiction were curtailed by the asylums. Several popes, in particular Gregory XIV. and Benedict XIII., restricted the right as narrowly as possible. All highway robbers, voluntary homicides, horse or sheep stealers, professional thieves, heretics under inquisition process, those who laid violent hands on nobles, forgers, false coiners, and duellists, were excluded from the privilege. In Germany, where the temporal power was strong, and the spiritual arm weak, the right of asylum was never very effective. Sometimes, however, the German barons would themselves set up the right of asylum in their castles. The German Kaisers never regarded the ecclesiastical asylum, and it was entirely swept away by the Protestant princes. In England, in the year 1487, the right was for the first time restrained by a bull of Pope Innocent VIII. In 1534, after the reformation had commenced, persons accused of treason were debarred the right of sanctuary, which word is more commonly used in English law than asylum, and hence the phrase, "to take sanctuary," is equivalent to take refuge. In the time of Queen Elizabeth, the right of asylum was taken away from all criminals, but reserved to debtors, which, in a time when lifelong imprisonment for debt was allowed, may well be considered a humane provision. In 1697, the right of asylum was at length taken away from insolvent debtors. In Scotland, to this day, Holyrood palace, as an ancient royal residence, continues to retain this right with respect to the persons of debtors. The bound-

aries of this place of refuge are liberal; the debtors find lodgings in a short street, the privileged part of which is divided from the unprivileged by a gutter running across it. This is the only existing sanctuary in the British empire. In the United States of America, no civil or ecclesiastical asylum has ever existed. To Macduff, thane of Fife, who dethroned Macbeth, and to his descendants, was given by Malcolm Kenmore, on the recovery of the throne of his ancestors, the privilege for any one of the clan Macduff who committed unpremeditated homicide, to have his punishment remitted for a fine, payable to the injured family, if he could get safe to Macduff's cross, which stood in Fifeshire. Many similar privileges were granted by charter in Scotland. The right of asylum endured longest in Italy, and was first put an end to by the French occupation in the last century. The houses of the clergy, and graveyards, became asylums in Italy in course of time. At the present day, the houses of the cardinals at Rome have this privilege; but criminals are generally surrendered to the civil power. The public policy of this right was long a subject of contention between the clergy and the poor people on one side, and the kings, lay lords, middle classes, and civil lawyers on the other. In a time of rude violence, when Lynch law, and the *lex talionis*, prevailed, an innocent man often got protection from lawless passions, by running to the clergy for refuge; as society advanced, and the arm of the law became both strong and sure, the right became only a means of sheltering criminals from due punishment, and dishonest debtors from injured creditors.—In England and America this name has been given to charitable institutions for the relief of orphans, the blind or dumb, and widows of poor officers or clergymen, and similar institutions.

ASYMPTOTE, a line (straight or curved) tangent to a curve, but having its point of contact with the curve at an infinite distance. If a weight were hung upon a cord, the ends of which were fastened to pins at unequal heights, the weight would slide to a point nearer the lower pin. Let now the cord gradually yield to the weight, and be stretched to an indefinite length, the weight, sliding constantly toward the middle of the cord, would move in a curve; and a vertical line midway between the pins would be an asymptote to that curve. An asymptote always approaches without ever meeting its curve; a beautiful type, says Leibnitz, of the progress of a soul toward God.

ASYNDETON, a rhetorical term, denoting the omission of connecting particles in animal discourse.

ATABAPO, or ATAGAVI, a river of Venezuela, rising in lat. 8° 10' N., long. 66° 44' W., and flows westerly some 80 miles to its junction with the Temi, where it turns northward for about the same distance, and discharges its waters into the Guaviara, a little above its junction with the Orinoco, near the

San Fernando de Atabapo, a village of about 800 inhabitants. The Atabapo is a very beautiful stream. Humboldt, in visiting it, was surprised by the great transparency and purity of its water, in which small fish and the bright quartz pebbles, of which its bed is composed, are visible at a depth of 20 or 30 feet. The waters are also very cool and agreeable to the taste. Among its fish are bavas and fresh-water dolphins.

ATABEK, a title of honor given to certain ministers and viziers by the Seljook dynasty of the sultans of the East. It means "the faithful parent." These dignitaries were the rulers of various provinces of the empire, in which they established a dynastic vicereignty, exercising all the rights of sovereignty except that the name of the nominal sovereign was added in the ritual of public prayer. The atabeks of Syria and Irak, 1086-1188; of Azerbaijan, 1186-1285; of Fars, or Persia proper, 1148-1284; and of Laristan, were the principal governors.

ATACAMA, a province of Bolivia, lying on the Pacific, directly south of south Peru. Its principal town, Atacama la Alta, is situated in lat. 23° S., long. 68° W., at the base of the Andes. It is about 290 miles in length and 150 in breadth. Cobija, the only seaport of Bolivia, is within the bounds of the province. It is very thinly peopled, and although the northern part has some fertile valleys, the greater part of the province is a sterile, and dreary desert. The interior of the desert is entirely uninhabited, and the whole number of dwellers upon the coast does not exceed 200. The men derive a precarious support from fishing. During the winter the sea is often for a long time too stormy for them to trust themselves upon it, and they then hunt any animals which the cold and snow may drive down from the mountains. The women tend flocks of goats in the infrequent meadows; and the men and women often change their residences and live apart, the former going from creek to creek, and the latter from valley to valley. This desert has been for ages the burial-place of the aboriginal Peruvians. Owing to the dryness of the climate and the soil, which is a mixture of sand and salt, bodies deposited here do not decay, but are preserved like mummies. Anhydrous sulphate of soda is abundant in almost every part of the district, and large masses of solid iron have also been found in different localities. There are warm medicinal springs in the northern part. Lieut. Gibbon at one point found 2 streams uniting, whose temperatures were 70° and 107° F. Gold, silver, copper, salt, and alum, are also among the mineral products of this country. The vicuña and the American ostrich are abundant. The volcano of Atacama, 18,000 feet in height, is in lat. 21° 35' S., long. 69° 15' W.

ATAHUALLPA, or ATABALIPA, Inca of Peru at the time of the invasion of the Spaniards, died

Aug. 29, 1533. He was the son of Huayna Capac. The laws of Peru required that the principal wives of the Incas should be blood-relations, and that no children of other parentage should be legitimate. Atahualpa's mother had been a princess of Quito; nevertheless, at the request of his father, the heir to the throne, Huascar, consented to resign his rights in favor of Atahualpa, on condition only that he should render homage to him, and not make conquests beyond his own kingdom. This liberal conduct was, however, infamously requited by Atahualpa, who, having secretly got together a large army, attacked his brother Huascar in Cuzco, took him prisoner, loaded him with chains, and exterminated all his adherents, putting his family and immediate dependents to death in the most atrocious tortures, at which the wretched Huascar was compelled continually to be present. Such, at least, is the story told by Spanish annalists, whose testimony is, however, doubtful, seeing that the murder of Huascar, their pseudo-ally, and the tyranny of Atahualpa, were among the causes of his own execution. If his ingratitude and treachery were really true, a terrible retribution was at hand. Pizarro and his followers were now in Peru, and Atahualpa hearing that his father had sent to them, opened negotiations with them himself. His proposals were received in a friendly manner by Pizarro, and an interview was arranged which Atahualpa attended followed by a very large number of unarmed subjects. Father Vicente de Valverde explained to him, through an interpreter, the mysteries of religion, and that on account of their heathenism the pope had granted his kingdom to the Spaniards. Atahualpa professed not to understand the tenor of this discourse, and could not at once resign his kingdom; whereupon a massacre of the assembled crowd was at once commenced by the Spanish soldiers, who seized Atahualpa and threw him into prison. On the arrival of Almagro the cupidity of the adventurers was excited by the magnificent proposals that Atahualpa made for his ransom, and with a desire of seizing the whole it was determined to put Atahualpa to death. Some of the more merciful of the Spanish leaders were disinclined to this extremity, and proposed to send him to Europe for the emperor to decide on his fate. But the counsels of the more unscrupulous party prevailed, and he was tried by a military commission. During his imprisonment Atahualpa's influence with his own people was undiminished, and his rancorous hate against Huascar being unaltered, his orders to put Huascar to death were obeyed. This was one of the charges against him on the court-martial by which he was tried, and being found guilty he was sentenced to be burned, a penalty commuted for strangulation by the garotte on his accepting baptism at the hands of the priests accompanying the invaders. (See Prescott's "Conquest of Peru," vol. i., p. 486.)

ATAIDE, Louis de, Count d'Attougnia, a

celebrated Portuguese statesman, born in the first half of the 16th century, died at Goa, March 9, 1581, was a lineal descendant of Joao Goncalves Zarco, the first explorer of the island of Madeira. In 1568 he was appointed viceroy of the Portuguese possessions in India, and was so successful in defeating the Ottoman armies which had invaded Chaul, that on his return to Lisbon his reception by the king and people of Portugal was a perfect ovation. On Oct. 16, 1577, he returned to the Indies to resume his vice-regal office, but the peace which had been concluded with the Ottoman king did not give him any further opportunity to add new victories to his laurels.

ATALANTA, a mythical personage, who may have been either a native of Boeotia or a native of Arcadia. The more authentic legend is that she was an Arcadian, and the daughter of Iasus, who, having prayed to the gods for a son, was displeased at her birth, and, as a mark of his displeasure, exposed her on the Parthenian mount. Here she was nurtured by a she bear, and grew up to womanhood, still, however, retaining her virginity, and becoming the most swift-footed of mortals. She vanquished the Centaurs, who sought to capture her, participated in the Calydonian boar-hunt, and engaged in the Pelian games. In course of time her father was reconciled to her, and restored her filial rights to her; but when he urged her to choose a husband, she insisted that every suitor who aspired to win her should first contend with her in running. If he vanquished her he was to receive her hand as the prize of victory; if vanquished, he was to be put to death. Milanion overcame her by practising the following artifice: as he ran he dropped 8 golden apples, the gift of Venus, one after the other, along the course, which so fascinated Atalanta that she could not refrain from delaying to pick them up, and while she thus delayed she was vanquished.

ATALAYA, a town on Canary island, near Las Palmas. It is only remarkable for the curious manner in which the inhabitants live. All the houses are excavated in the sides of Mt. St Antoine, in which the people of the town live like bank-swallows. Pop. 2,000.

ATARAIPU, a lofty pyramidal rock in British Guiana, lat. $2^{\circ} 55' N.$, long. $58^{\circ} 48' W.$ It is situated near the Rupununy river, and has an altitude of 900 feet above the savannah on which it is situated, and 1,800 feet above the sea level. "For 350 feet above its base," says Schomburgk, "it is heavily wooded, but above this point it towers up in a pyramidal form 550 feet more, a solid mass of naked granite." The meaning of the name is "devil's rock."

ATARUIPE, a cave on the declivity of a steep mountain near the mission of Atures in Guiana. In this cavern Humboldt found nearly 600 skeletons in good preservation, and arranged in good order upon a sort of baskets, made of the petioles of palms. All the skeletons were bold and entire.

ATAUAI, or **KAUAI**, also written **Aroor** and **Arur**, one of the Sandwich island group, lat. $23^{\circ} 8' N.$, long. $159^{\circ} 20' W.$, 240 miles N. N. W. of Hawaii. The form of the island is somewhat oval, 40 miles in length and 24 in breadth at its widest part. The central portion is a high plateau intersected with deep, fertile valleys, and having elevated peaks rising from its surface to the height of 7,000 feet above the level of the sea. From this central plateau it slopes on every side to the sea, and terminates in a bold shore. Hanalei and Waimea are its principal ports. The population in 1858 was 6,988.

ATAULPHUS, the second king of the Visigoths, and successor to Alaric (410), to whom his sister was given in marriage, and founder of the Gothic kingdom of Gaul. He joined Alaric in Italy (409) with an army of Goths and Huns, and aided him in the siege of Rome. After the death of his brother-in-law, Ataulphus marched into Gaul, carrying with him Placidia, the sister of the emperor Honorius, a captive. The Gallic provinces of the empire were then in dispute between Jovinus, who, at the head of a mixed army of Burgundians, Alemanni, and Alani, had temporarily possessed himself of them, and the emperor Ataulphus offered to treat with Jovinus and share with him the spoils. To this proposition Jovinus was little inclined to listen. The Gothic king, therefore, turned his attention to Honorius. Offering him terms of peace he at the same time attacked and defeated Jovinus, and put him to death. Honorius now demanded the return of his daughter, who had been espoused to Constance. Instead of returning Placidia, Ataulphus, by her own consent, married her. This was an era in the life of Ataulphus, and in the social history of the Gothic kingdom of Gaul. But all the efforts of the barbarian king to reconcile himself to Honorius were of no avail. Constance, smarting under the wrong which had deprived him of alliance with imperial blood, harassed the peace of the Gothic kingdom, until (414) the barbarians were compelled to evacuate the territory, burning Bordeaux as they left. Ataulphus, who, it is said, had already become obnoxious to the hatred of his subjects, by his cruelties, or his zeal at reform, was assassinated by one of his equestrians in the year 415.

ATBARA, the principal eastern branch of the Nile. It rises in central Abyssinia, among the Lasta mountains, a little to the east of Lake Tzana, one of the sources of the Blue Nile. Pursuing a mainly north-easterly direction, it forms the boundary between Amhara and Tigre, cuts the southern part of Nubia, and, after receiving many tributaries, enters the Nile at lat. $17^{\circ} 45' N.$, and long $34^{\circ} 5' E.$ Through the latter part of its course it traverses the lowlands of Waldehuba and Walkayt. When Burckhardt visited it in 1814 he was struck with the luxuriant vegetation which lined its banks, and the caravan were so impressed with the beauty of the scene, that, in allusion to the dreary tract over which they had just passed, one of them

exclaimed, "After death comes paradise." On the shores of this river, near Goz Rajeb, this distinguished traveller saw the ruins of some ancient building of huge dimensions, but was deterred from exploring it by the assurance of his guides that it was the haunt of banditti. The Atbara is mostly fordable, and abounds in crocodiles and hippopotami. It is about 300 miles in length.

ATOCHA, written also ATTU, ATOHU, ATCHAM, ATOHAK, ASHKA, and ATSCHAK, one of the Aleutian isles, lying in N. lat. about 58°, E. long. 175°, about 10 miles wide and 70 long. It has a volcano in the eastern part, which constantly emits a sulphureous discharge, and a hot spring at its foot. There is a harbor at the east extremity. Pop. about 60.

ATCHAFALAYA, a river and bayou of the Mississippi river in the state of Louisiana, connecting with that river near the northern line of the state, but receiving very little of its waters except in time of flood. Its course is nearly southward to the lake Chetimaches, through which it passes, and from which, in a greatly enlarged stream, it discharges itself into Atchafalaya bay. Its name signifies lost river, and it is supposed by geographers to have formed the old bed of the Red river, which probably at one time found its way to the gulf of Mexico as an independent stream. The Teche and Courtableau are its principal tributaries. Its whole course is about 260 miles.—ATCHAFALAYA BAY, a bay on the southern coast of Louisiana indenting the delta of the Mississippi, and receiving the waters of Atchafalaya bayou and Lake Chetimaches.

ATCHISON, a county of Missouri, forming the N. W. extremity of the state, lying along the left bank of the Missouri river. It is drained by the Nodaway, Tarkeo, and Nishnabotona rivers, and contains 695 square miles, and a population of 1,678, only 80 of whom are slaves. Indian corn, wheat, oats, cattle, and swine, are the staples. In 1850 this county produced 149,887 bushels of corn, 15,577 of wheat, and 9,788 of oats. There were 175 pupils attending public schools. The live stock was valued at \$77,284.

ATCHISON, DAVID R., an American senator, born Aug. 11, 1807, at Frogtown, Fayette county, Ky. The son of a wealthy farmer, he was educated for the bar, and emigrated to Liberty, Clay county, Missouri, in April, 1830, where he engaged in the practice of his profession. He was a bachelor, a man of convivial and social habits, and became very popular with the early settlers in that region. He was elected to the legislature from Clay county in Aug. 1834, and again in 1838. In Feb. 1841, he was appointed judge of the circuit court for Platte county. Upon the death of Mr. Linn, U. S. senator, in the autumn of 1841, Mr. Atchison was appointed to the vacancy by Gov. Reynolds. It was thought by many that this appointment was merited, and had been recommended by Col. Benton and other au-

thorities of the democratic party; by many others it was said that the governor was himself ambitious of the senatorship, and had selected Mr. Atchison as a person who could easily be beaten at the next election. The death of Gov. Reynolds, however, occurred before the meeting of the legislature, and Mr. Atchison was elected without serious opposition. He was re-elected for 2 full terms, the last of which expired March 4, 1855. When he entered the senate he acted cordially with Col. Benton, and as late as 1848 claimed that he was the first to frame an act organizing the territory of Oregon with a clause prohibiting slavery. The next year he attached himself to the party of Mr. Calhoun, was elected president *pro tem.* of the senate, was received into favor and raised into prominence by his new party, and became the antagonist of Col. Benton in his own state. The union of a few democrats under the lead of Mr. Atchison, with the whigs, defeated Col. Benton in 1850. Mr. Atchison became especially prominent in the legislation for the organization of the territories of Kansas and Nebraska. The first bill which was introduced into congress to this end was in the winter of 1851-'52, and had no reference to the subject of slavery. This bill Mr. Atchison advocated by a speech in the senate, but subsequently on his return to Missouri he became an opponent of the bill, and declared in a public speech that he would never vote for the measure unless the Missouri compromise were repealed. The public sentiment at that time was such that his declaration was denounced by the papers of his own party; but within a month from the opening of the next congress, Mr. Douglas, from the committee on territories, reported a bill to organize these territories, containing a clause which, by strong implication, repealed the Missouri compromise, although the report accompanying the bill expressly deprecated any such intent. This clause was assailed by Messrs. Chase, Sumner, and others, in a printed circular, which led to a vehement and personal debate. There was, finally, substituted another clause which repealed the Missouri compromise outright, and in this shape the bill was passed. Subsequently Mr. Atchison affirmed, in a speech made in the territory of Kansas, that the clause repealing the Missouri compromise originated with him; that he had proposed it to Mr. Douglas, who at first declined to insert it in his bill, but after a period of hesitation consented to do so. This account tallies with public facts, and though it was published in the newspapers was not denied by Mr. Douglas. Mr. Atchison, since he lost his seat in the senate, has been a leader and chief adviser of the slavery party in the recent troubles in Kansas. He now resides on a fine farm in Clinton county, Missouri.

ATOHUJEFF, or ATOHUXEFF, an island at the mouth of Tchernot-Protok, the black current into the Azof sea, opposite Yenikale. It is a spot occupied principally by fishermen for the preparation of caviare.

ATE, a Greek deity, daughter of Eris, or Zeus. She plays very different parts in the tragic and epic poets. In the former she is the punisher of those who perpetrate crime, in the latter she is the instigator of gods and men to rash and pernicious deeds, which superinduce suffering and sorrow. In this character she persuaded Zeus to take an oath, which afterward enabled Hera to transfer to Eurystheus the power that had been intended for Hercules. When Zeus perceived what he had done, he cast Ate from Olympus, and excluded her forever from the society of the gods. Ate figures most prominently in the poems of Homer and the tragedies of Æschylus.

ATELLANÆ FABULÆ, Atellane plays, a species of farce or comedy, so called from Atella, a town of the Oscans in Campania, southern Italy. From this fact, and also from their being played in the Oscan tongue, they were sometimes called *ludi Osci*. No entire play has come down to us. They were introduced into Rome, and were received with as much favor there as the negro melodies have been in New York. The Oscan dialect was easily intelligible to the educated classes of Rome, and the *Atellana* were allowed to be performed by Roman citizens without degradation and loss of civil rights. The humor of the Oscan plays, like the negro *soirées*, to which we have compared them, consisted in the burlesque pictures of provincial manners, provincial oddities, and provincial dialects, which they presented. The Harlequin, the Pulcinello, the Brighella, and the Pantaloon of the modern stage, are lineal descendants of the *dramatis personæ* of the *Atellana fabula*. Lady Morgan, in her work on Italy, gives the theory of modern scholars on this point: "The Pulcinello of Italy is not like the Polichinel of Paris, or the Punch of England; but a particular character of low comedy peculiar to Naples as Pantalone is of Venice, and Il Dottore of Bologna. Their name of Maschere comes from their wearing masks on the upper part of their faces. They are the remains of the Greek and Latin theatres, and are devoted to the depicting of national, or rather provincial absurdities and peculiarities." At Cologne, famous for its connection with the Romans, there still exists a puppet theatre, where farces are performed by dolls, and the dialogue spoken in the *patois* of the country, and full of satirical local allusions, is carried on by persons concealed. Being a fashionable entertainment, the *Atellana* were not so coarse as the *Mimes*, which latter were the popular favorites. The Oscan, or Opican language was spread over all the south of Italy; some remains of it have come down to us. Here is a specimen which is taken from an inscription found at Bantia in Lucania, with the Latin interpretation written underneath:—

In svæ pia lone fortis meddis moltaum herest.
Et ai quis eum fortis magistratus multæ volet.
Amperit mistreis altis eltnas moltas moltanm leitad.
Una eum magistris altis eraril multæ multore licito.

Herest is supposed to be connected with *χαρῆσσι*, *meddis* with *μεδων*, *amperit* with *αμπερεται*. The *Atellana* were written in verse, chiefly iambic, with many trisyllabic feet. Lucius Sulla, the dictator, and a Campanian by birth, wrote plays of this sort. The names of some of the *Atellanes* of Quintus Novius have come down to us, as "Macchus in Exile," "The Poulterer," "The Vintagers," "The Deaf Man," "The Thrifty Man." Lucius Pomponius, who lived about 90 B. C., wrote *Macchus Miles*, the *Pseudo Agamemnon*, the *Bacco Adoptatus*, the *Æditimus* (Sacristan), &c. The Latin, and sometimes the Greek languages, in the times of the emperors, crept into the *Atellana*, particularly in one part called the *Centicum*.

A TEMPO (Ital. in time), a musical term, signifying the return to the original movement, after it has been interrupted by a recitative, or by some other change of time.—**A TEMPO GIUSTO** (Ital. in equal time), designates a steady, scientific movement, in opposition to one of an impassioned character.

ATFIEH, a province of middle Egypt, extending nearly one hundred miles along the eastern bank of the Nile. Its capital, of the same name, is situated near the site of the ancient Aphroditopolis, or city of Venus, 42 miles S. S. E. from Cairo. It is the only place worthy to be called a town in the whole province. Population about 4,000.

ATH, or **ÆTH**, a strongly fortified city of the province of Hainault, in Belgium, on the river Dender, in long. 3° 46' E., lat. 50° 42' N., population, in 1850, 8,437. It has a handsome town-hall, an arsenal with seven bomb-proof magazines, a college, orphan asylum, &c. It has manufactures of linen, woollen, and cotton fabrics, of hats and gloves, bleaching and dyeing establishments, breweries, &c. It is the seat of a considerable trade.

ATHA BEN HAKIM, a Moslem impostor who lived in the 8th century, was born at Meron, and was by trade a fuller. He was also called "Mocanna" or the "Veiled One," from his wearing an impenetrable mask, according to his own account, to cover his face from the sight of man, who could not behold it and live; it is, however, believed that it was to hide from his followers the fact of his having lost an eye, which, were it known, would materially lessen his influence. Atha pretended to be the embodiment of the living spirit of God, which, after transmigration through many forms, human and divine, now, he affirmed, sojourned in his breast in all its original power. His knowledge of philosophy and chemistry was such, that he was enabled to perform wonders which deluded many into the belief that he possessed supernatural powers. Having succeeded in collecting a large band of followers, Atha retired to the castle of Kech, in Transoxane, where he intrenched himself. He was here besieged by a considerable band of soldiers, sent by the caliph Mehedy, under command of Abu Sauid; finding himself in danger of losing his liberty, he preferred to put an end

to his life. He therefore, according to some, applied the torch to his castle and threw himself into the flames, followed by many of his disciples. Others state that he destroyed himself and all who were with him by poison; and again others that he prepared a cauldron of corrosive acid, into which he precipitated himself, in the hope that his complete destruction would follow, causing the belief that he had been removed by divine agency. It is said that his design was frustrated by a lock of his hair escaping destruction. Mocanna is the hero of Moore's poem, "The Veiled Prophet of Khorassan."

ATHA MELIK, ALA-ED-DEEN, surnamed AL-JOWAINI, a Persian historian and statesman, born about 1227, in the district of Jowain, near the city of Nishapoor, died at Bagdad, about 1282. He enjoyed the favor of the Mogul princes of Persia, and was for many years governor of Bagdad. It is, however, only as a writer that he deserves especial notice. His principal work is on the history of the Moguls, and is entitled *Jehan Kuchak*. It has been highly valued by oriental historians, and was by Abulfaragius, Mirkond, and others, considered the chief authority on the subject of which it treats.

ATHABASCA, or ATHAPESCOW, a lake and river of British North America. The former is 230 miles in length from east to west, and with an average breadth of 20 miles, lat. 59° N. long. from 106° to 112° W. The Athabasca river rises in the Rocky mountains and flows into the lake at its south-western extremity. The lake discharges northward by Slave river, and it communicates through Slave lake and Mackenzie river with the Polar sea, and through Wollaston and Deer lakes and Churchill river with Hudson's bay.

ATHALIAH, the daughter of Ahab, that "wicked king" of Israel. She was sought by Jehoshaphat, king of Judah, through motives of policy, in marriage for his son Jehoram, heir of the Judean sceptre. This marriage appears to have been the occasion of the introduction of idolatry into Judah, and of an interruption in the dynasty of the Judean kings. Jehoram walked in the ways of Ahab. At his death, Ahaziah, his son, reigned one year, during which time a confederacy had been formed between Judah and Israel against Syria. The conspiracy of Jehu, a captain of the Israelitish army, who had been posted at Ramoth-Gilead, resulted in placing him upon the throne of Israel, and destroying Ahaziah, the king of Judah, with 42 of the princes of the tribe. Athaliah, seeing the advantage that lay before her, caused the rest of the royal line, as she supposed, to be slain, and mounted the throne of Judah herself. But after a reign of six years, it turns out that in the massacre the priests had seized an infant of the royal house, Joash, and had secretly brought him up in the temple. In the seventh year the high-priest brought forth this child, caused him to be anointed as king, and ordered the arrest and condign punishment of Athaliah

by the armed Levites, and thus ended the interpolation of Israel in the Judean line. The discovery of Joash is the subject of a tragedy by Racine, written at the request of M^{de} de Maintenon.

ATHAMAS, a son of Æolus, married Nephele by order of Juno; but he was secretly in love with Ino, the daughter of Cadmus, by whom he had two sons, Learchus and Melicertes. Nephele, on discovering that Ino occupied a higher place in the affections of Athamas than herself, immediately vanished from the earth. Disasters innumerable now descended on Athamas and his offspring. Ino hating Phrixus and Helle, his children by Nephele, endeavored to destroy them, by first causing a famine, and then bribing the messengers who had been sent to consult the oracle about it, to declare that, if they would avert the calamity, they must sacrifice the sons of her rival. Nephele, however, rescued Phrixus and Helle from the fate which impended over them, and transported them to Colchia, on the back of the ram with the golden fleece. Juno next came forward to punish the infidelity of Athamas, and afflicted him with madness. While in this condition, he killed Learchus, one of Ino's sons, and his mother, in despair, cast herself into the sea with her other son, Melicertes. As the murderer of his son, Athamas had to flee from Boeotia, and having consulted an oracle as to where he should settle, he was commanded to remain wherever he should be hospitably received by savage beasts. He travelled long in search of such a land and such entertainers, but arriving at length to a place where wolves were devouring sheep, they fled away at his approach, and left their slaughtered prey at his disposal. Athamas at once perceiving that this was the country marked out for him by the oracle, settled there, and called his new territory Athamania, after himself.

ATHANAGILD, 14th king of the Visigoths in Spain, succeeded Agila in 554, and died 566. Being threatened by Agila, he applied for aid to Justinian, emperor of the East, to whom he offered several cities in Spain. Justinian sent the troops, and Athanagild defeated his adversary, who was obliged to retire to Merida. Athanagild was reestablished at Toledo which he made his capital.

ATHANARIO, king of the Visigoths in Thrace about the middle of the 4th century, died at Constantinople, Jan. 25, 381. The emperor Valens made war upon him and compelled him to sue for peace. Athanaric would not come upon the Roman territory to sign the treaty, while Valens thought it beneath his dignity to visit the barbarian at home. Accordingly a bridge of boats was constructed across the Danube, and the two potentates met in the middle. In 380 he was compelled to flee to Constantinople, in consequence of an insurrection. Theodosius received him hospitably, and gave him a small pension until his death.

ATHANASIAN CREED, a symbol chiefly composed of precise theological definitions of

the doctrines of the Trinity and Incarnation. The first notices of it are from the 7th century, and do not mention the author. It made its appearance first in France, in the Latin language, became generally known throughout the West, and was adopted last of all in the East. The Greek writers immediately succeeding St. Athanasius make no mention of it. In the MS. editions of his works it is usually not found at all, or, if it is, with the remark "commonly" or "incorrectly" ascribed to St. Athanasius. Although not at first ascribed to him by any writer, it was subsequently attributed to him by all ecclesiastical writers. Durandus (1287) states that it was composed by St. Athanasius, at Treves, during his exile in the West, and Mayer, a modern German critic, thinks this account not improbable. Modern critics generally suppose that it was drawn up by some able theologian, as a summary of the doctrine of St. Athanasius, from which circumstance it obtained the name of Athanasian creed, and in process of time was attributed to the great Alexandrian doctor. It has been attributed, on conjectural grounds, to Hilarius and Venantius Fortunatus, French bishops, to Vincent of Lerins, and to Virgilius, bishop of Tapsus, in Africa (484). This creed is an authoritative formulary of faith in the Catholic and Greek churches. Its authority does not rest on the presumption that it was composed by St. Athanasius, but on its general acceptance as a correct enunciation of Catholic faith. In the Roman Catholic church it is recited at the office of Prime on Sundays, when the office is Dominical. In the church of England it is accepted as of equal authority with the Apostles' and Nicene creeds, and ordered to be recited on certain festivals at the morning prayer. In the 39 articles of the Protestant Episcopal church of the United States all mention of it is omitted, and the creed itself has no place in the prayer-book.

ATHANASIUS, SAINT, patriarch of Alexandria and doctor of the eastern church. He was born at Alexandria about the year 296, of Christian parents, educated under the direction of the learned Alexander, afterward bishop of the city, not only in the elegant branches of secular learning, but more thoroughly in the studies which were preliminary to the Christian ministry, particularly the interpretation of Scripture and the canon law. His preparation was completed by a sojourn of some months or years in the desert of Egypt, where he had the privilege of serving as attendant upon the famous St. Anthony, and could learn by experience the nature and effect of monastic austerities. At the age of 28 he received deacon's orders, and, in the discharge of his office, so signalized himself as a foe to every kind of heresy, that he was chosen by the bishop Alexander to accompany him to the council at Nice (A. D. 325), where the doctrines of Arius were to be dealt with. To the perseverance, subtlety, learning, and eloquence of Athanasius in that council, his adroitness in the management of men and in the statement of ar-

guments, is principally to be attributed the momentous result, which declared by a majority of voices that Arianism was heresy. His bearing on this great occasion, not less than the dying request of the bishop Alexander, secured his election as bishop to the principal see of Africa. The bishops merely came together to ratify a fixed and inviolable popular choice, which imperial opposition could not prevent. Athanasius assumed the episcopal chair about the middle of the year 326, and retained the right and the title until the year 373—more than 46 years. But his long episcopal life was far from being peaceful. It was broken by very numerous misfortunes and disasters. His uncompromising orthodoxy subjected him to the most bitter hatred and the most savage persecution. The party of Arius, which he never ceased to denounce, vowed the ruin of the man who had disgraced and silenced their leader. A series of heretical emperors drove into repeated banishment the intrepid prelate, who was as much an enemy to error on the throne as error in the church. Accusations of many kinds, some of them true, but more of them false, were multiplied against him. He was charged with tyranny, with sacrilege, with the rape of a virgin and the murder of a bishop, with the practice of magic arts, with fraud upon the revenues, with the most mean and cruel avarice; while proofs were offered of his bold defiance of the civil power, and of his zealous intolerance. Even the Roman bishop on one occasion turned against him and subscribed his condemnation. Two years at one time were passed in exile at Treves. Six years long, at another time, was he absent from his flock. The Pagan Julian, from whose tolerance he hoped to find protection, would not tolerate the "wretch" who had dared to baptize Greek women of noble birth; and Athanasius escaped only by stratagem from the emissaries which this monarch sent to murder him. In the reign of Valens the aged bishop was driven for the fifth time from Alexandria, and hid himself for 4 months in his father's tomb. At the age of 76 he was at last allowed to close in peace his troubled career. His festival is kept in both the Greek and Latin churches on May 2, and in the Greek church also on Jan. 18. The life of Athanasius has historical importance mainly from its connection with the Arian controversy, and the establishment and defence of the Nicene creed. With the exception of his "Discourse against the Pagans" and his treatise on "The Incarnation," the works of his novitiate, all the writings of the Alexandrine patriarch have a direct bearing upon the great question in dispute. Some of them discuss the theory of Arius and refute his reasonings; some inveigh against the artifices and violence of his party. The doctrine of the identity of Christ with God is contrasted with the doctrine of a derived Sonship, as well in visible fruits as in rational and scriptural soundness. In one treatise Athanasius gives a graphic history of Arianism, judged from the orthodox stand-point. In another he

pleads with his bishops not to be led captive by the specious persuasions of the foes of the faith. Here it is a learned criticism upon the words of Jesus in the gospel of John; there it is an apology for his flight in persecution. And whether he instructs the churches whom to receive, or advises the monks concerning their duty, or consoles the suffering in time of their trial, or defends himself against the slanders of foes, or explains the word of the Holy Writ, his highest and his absorbing thought and purpose are fixed upon this central doctrine that Christ is God, and that the Son and the Father are equal in honor, in eternity, and in essence. The style of Athanasius, if less florid than those of the other great fathers of the eastern church, has the merits of strength, clearness, conciseness of expression, and exact logical order. It is praised even by Erasmus, the most fastidious of critics, above the style of Chrysostom and Gregory, those masters of sacred eloquence. What it lacks of finished grace it makes up in nervous vigor. There are fewer digressions than in most of the early controversial writings, and fewer flights of fancy than a successor of Clement and Origen might naturally indulge. The character of the man may be discovered in his works. Bold, unbending, confident even to dogmatism, severe against what he believed to be heresy, suspicious of the promises and professions of all who were not friends of the truth, he was yet courteous in his address, mild in his general intercourse, kind to the poor, sincerely pious, just in his decisions, inspiring reverence for his character even in those who dreaded his authority. His patience was never wearied. His confidence in the triumph of truth never forsook him. He is first, if not greatest, in the list of those whom the church counts as her noblest champions; and the defeat of Arianism would be his lasting monument without that later creed, which, expounding the doctrine which he defended, improperly bears his name. The story of his controversies and sufferings is graphically told in the narratives of the historians, Socrates, Sozomen, and Theodoret. The best edition of his works is the Paris edition of 1627-'28, 8 vols. folio.

ATHEISM (Gr. *a* privative, and *theos*, God, without God), the denial of belief in God, the Supreme Being. Atheism may be either practical or speculative. Practical atheists are those who live as if there were no God; speculative atheists are those who deny that God exists, and undertake to explain the phenomena of the universe without admitting the idea of God. The fact of speculative atheism has been questioned by many grave philosophers. God, they contend, is the first principle not only in being, but in science, the immediate light and object of reason or the intellect, and affirmed in every act of intelligence. In other words, God by his immediate presence creates and constitutes the faculty of reason, and is its primary and immediate object, so that he affirms, as the intelligible object and light of reason, his own

existence in every one of our thoughts or intellectual acts. According to this view, God, as the intelligible, is intuitively evident, and it is impossible for any one to think without in reality thinking God. But as no one can deny God without thinking, it is therefore impossible to deny his existence. The very act of denial, if analyzed, would be found to contain the affirmation of his existence. According to this doctrine, real speculative atheism is an impossibility.—But, if God is affirmed as the ideal element in every thought, and it is impossible to think without thinking that which is God, it is conceded that he is so thought or affirmed only as the intelligible, and not distinctly and reflectively, or with reflex consciousness, as God. He is really thought, he enters into every thought as its ideal or objective element, without which no thought is possible. But it is not intuitively evident to reason, that this ideal element of thought is God; this is made manifest only by reflection, or reflective reasoning. In reflecting on the intuitive data, and attempting to render an account to oneself of the ideal and objective element of thought, it is very possible to misapprehend it, and to misinterpret and to misapply it. It is even not difficult to mistake its real character, and to fail to perceive the fact that it really is God affirming himself as the immediate light and object of our intellect. Hence, though it is impossible to think and not to think God, it is possible for men to overlook the fact, that what they think in the ideal element of thought is God, and therefore to regard themselves as atheists. In this sense there may be, and have been in all historical ages, speculative atheists, at some epochs in large numbers.—Yet as the ideal element of thought is an inseparable and indestructible element; and as that element really is the affirmation of his own existence by God himself, speculative atheism is necessarily misapprehension, or misrepresentation of that element, rather than its absolute denial. It lies not in the denial of the ideal or necessary element of thought, for that no man can do; but in confounding it with something else, or in identifying it with secondary causes, created objects, or forces. In the history of speculative atheism we find this has been done in 3 different ways, giving us 4 distinct classes of speculative atheists: I. Material atheists. These substitute for God the material forces of nature, or identify with them the being or reality affirmed in the ideal element of thought. They cannot free themselves from the conception of the ideal, of being, power, cause, necessity, &c., but instead of integrating them in a supreme, eternal, immutable, and necessary being, origin, and end of all, they identify them with the material forces of the universe, and ascribe to these forces most of the functions which theists ascribe to God. In this class may be placed the Greek philosophers of the Ionian school, Lucretius, Hobbes, the French atheists of the last century, Comte, and several modern

Germans, not represented by any school. II. Ideal atheists. These substitute for God the laws and principles of the universe. They suppose the universe operates by virtue of certain universal laws or principles inherent in it, and indistinguishable from it, constituting it a sort of self-existing and self-developing organism, in which they approach the old philosophers, who held God to be the soul of the world—*anima mundi*. In this class we may include Giordano Bruno, Vanini, Schelling, and, as to their tendencies, large numbers of distinguished modern naturalists. They admit an intelligible or super-sensible universe, which they regard as the real universe, and thus look upon the sensible universe, not as real, but as simply phenomenal. Schelling seems in his later statements to have approached theism, and perhaps some others in the list were not personally unbelievers in God, but they belong nevertheless to the class of ideal atheists, inasmuch as in their systems they attempt to explain the existence, the facts, and the phenomena of the universe, without the creative act or intervention of a supra-mundane God, or any power distinguishable from the universe itself. III. Egoistical atheists. These confound the ideal or necessary element of thought, which is objective, that which affirms itself to us in the fact of thought, with the subjective element, or consciousness; or, in their own language, assert the absolute identity of subject and object in thought. To this class belong Fichte, in his earlier teachings, Hegel, as explained by a portion of his disciples, and in germ even Immanuel Kant himself. These start with the assumption that thought begins and ends with the subject thinking, and demands no really objective existence as its necessary condition. In other words, the subject does not need, in order to think, an object distinct from itself; and in the fact of thought there is no object affirming itself, but simply the subject producing or projecting its object from itself. The subject suffices for itself, is independent, absolute, and creates its own world. The universe, with all its principles, laws, phenomena, truth, beauty, goodness, are all projected from the subject, the ego, and depend on it, and are voluntarily or involuntarily determined by its laws,—are, in fact, only the phenomena, modes, affections, or productions of the thinking subject. They confound, therefore, the ideal with the subjective, the necessary with the contingent, being with existence, and assert the absolute identity of the object with the subject. IV. Eclectic atheists. These attempt to explain the phenomena of life and the universe, not by any one of the methods mentioned, taken as an exclusive method, but by a combination of two or all of them.—Atheism, whatever its method, accepts in some form the ideal element of thought, and ascribes to the material forces of nature, to universal laws and principles, to absolute egoism, or their combination, the causality, the independent being, the adaptation of

means to ends, the arrangement of one thing in relation to the other, and the production of harmonies, which theism ascribes to the Supreme Being, or supra-mundane God. It does not deny the ideal element of thought, or the fundamental conceptions which enter into the belief in God, of which it would seem the human mind cannot divest itself, but applies them to the universe itself, mistaking, in the view of the theist, second causes for the primary, and derivative or created being for the primitive. Speculative atheism may be briefly defined as the denial of the Supreme Being as first cause, and practical atheism as the denial of God as the last or final cause; consequently the denial, as theists allege, of the moral law, moral obligation, or duty; for if there is no end for which—*finis propter quem*—man exists, there is and can be for him no moral law, no duty; and, if God is not that end, then he can be under no moral obligation to obey God, or to submit to his will, or his law.

ATHELING (Sax. *athel* and *ling*, a noble youth), a title borne by several members of the royal house in the Saxon period of English history. It was long regarded as a surname, and was first proved by the researches of Selden to be only a title of honor. Thus Selden remarked that the earlier Latin chroniclers wrote the name of Edgar Atheling as *Edgarus Clyto*, the last being a word of Greek origin, signifying the renowned or illustrious. The title was not limited to the heir-presumptive to the throne, and at first belonged probably to all who were of the blood of Odin, the ancestor of all Saxon sovereigns. See *EDGAR ATHELING*.

ATHELNEY, *ISLE* OR, a tract of about 100 acres of land, in the county of Somerset, in England, 7 miles S. E. of Bridgewater. In the time of Alfred the Great, it was an island at the junction of the Tone and Parret rivers. Alfred concealed himself among its marshes during the Danish invasion, and afterward founded an abbey there, about 888.

ATHELSTAN, king of England, from 925 to 940, and was the first who called himself king of the English; Edward the Elder, his father, and Alfred his grandfather, having called themselves kings of the West Saxons, or Anglo-Saxons, while Egbert and the kings between him and Alfred never assumed a larger title than kings of the West Saxons. Athelstan was the illegitimate son of Edward the Elder, but as the only legitimate son of Edward who was of age died a few days after the death of his father, Athelstan, according to the customs of descent which prevailed among the Saxons, was preferred by the Witenagemote to his legitimate brothers who were under age, and he was crowned king of the Anglo-Saxons at Kingston, on the Thames. He did not, at his accession, hold sway over the whole even of modern England proper. Cornwall and half of Devonshire were under the West Welsh princes, as in the north was the independent kingdom of Northumbria. He annexed the territory of Cornwall

and Devon, and exacted tribute from Howel Dha, the Pendragon of Wales. When Sigtric, king of Northumbria, died, Athelstan seized upon his territory also. The Irish, the Scots, and the Welsh, saw with terror or dislike the increase of the power of the South Saxon king. As the kingdom of Northumbria had been chiefly settled by Danes, and as Anlaff was of Danish descent, the Danes and Norwegians sent Anlaff a force to expel Athelstan from Northumbria. Anlaff adroitly allied himself with the Irish, the Scots, and the Welsh. The allied army met the English forces under Athelstan, at Brunenburg, in Northumbria, and was signally defeated. In Saxon poetry and history, this victory was called the Great Battle. After this event, Athelstan enjoyed great consideration on the continent of Europe. His sisters were given in marriage to the king of France, the emperor of Germany, and a Norse king. He died in his 47th year, and was buried in the Abbey of Malmesbury, leaving no family, and was succeeded by his brother, Edmund. England advanced in civilization under Athelstan; he added much to the code left by Alfred. One of his decrees was, that any merchant who made 3 voyages on his own account beyond the British Channel, or narrow seas, should be entitled to the privileges of a thane, or gentleman. He favored learning, built monasteries, collected books, and encouraged the translation of the Scriptures into the vernacular. Two of his books are believed to be extant among the Cottonian manuscripts in the British museum.

ATHENA, or PALLAS ATHENE, in Greek mythology, one of the principal of the Olympian divinities. It appears from the various forms of the myth, that she was one of the most ancient religious conceptions of the Greeks. The fable of her birth is thus related: Zeus, after a victory over the Titans, chose for his first spouse the goddess, Metis; but an oracle having declared that the son of Metis would snatch the supremacy away from his father, Zeus in alarm swallowed both Metis and her unborn child. When the time of birth arrived, Zeus felt a violent pain in his head, and in his agony requested Hephestus to cleave the head open with an axe; whereupon Athena sprang forth, according to the later accounts, in full armor, and with a mighty war shout. She first took part in the discussions of the gods, as an opponent of the savage Ares. She gave counsel to her father against the giants, and herself slew Pallas and Enceladus, the latter of whom she buried beneath the island of Sicily. She was the patron of heroism among men, and armed with her ægis, aided her loved Greeks in the Trojan war. As a protectress of the arts of peace, she appears as a maiden, in many respects resembling a princely daughter of the early heroic period. She bears in her hand the spool, the spindle, and the needle, and is said to have invented and excelled in every kind of work proper to women. She also extended her active and original genius over the employ-

ments of men, and the agriculturist and the mechanic were under her care, and the philosopher, as also the orator and poet, delighted in her protection. In all these employments she is the symbol of thought, the goddess of wisdom; and as such she was worshipped throughout Greece, and under the name of Minerva, she was inherited by the Romans. She was especially the national divinity of the Athenians, having in the reign of Cecrops contended with Poseidon for the land, which she planted with the olive. On the Acropolis of Athens stood the magnificent temple of the Parthenon, dedicated to her, and containing her statue by the hand of Phidias: and the sacred festival of the Panathenæa, was celebrated with great splendor in her honor. In the representations of art, as in the events of her life, she remains the goddess of pure reason, raised above every feminine weakness, and disdaining love. The helmet, buckler, lance, and ægis, were her attributes; and the olive-branch, serpent, and owl, were sacred to her. She was in the ancient traditions represented as clothed, usually in a sleeveless tunic, over which she threw a cloak, or folding peplus.

ATHENÆUM. I. A place, whether town or temple, sacred to the Greek goddess, Athena. II. A particular gymnasium at Athens, dedicated to Athena, where poets and orators used to assemble, recite their pieces, and instruct youth. III. A high school or university, founded by the emperor Hadrian, at Rome, about 140 B. C., for the promotion of literary and scientific studies. Under Theodosius II., there were 3 salaried orators, 10 grammarians, 5 sophists, 1 philosopher, and 2 lawyers, employed in it as teachers; poets, pedagogues, orators, and critics, were also wont to come there to recite their productions, on which occasions the emperors were often present. This establishment became the model for a number of provincial schools scattered over the western empire, of which the best known are those of Lyons and Nismes. IV. In modern times, the name has been applied to voluntary associations of persons of literary or scientific tastes, for the purpose of mutual improvement.

ATHENÆUS, a distinguished Greek writer, who lived in the 8d century of the Christian era, was a native of Egypt. He is chiefly known to us as the author of the *Deipnosophista*, a voluminous work of imaginary table talk, on almost every conceivable subject, especially gastronomy, between certain learned men while enjoying themselves, as it were, at supper in the house of an imaginary Roman named Laurentius, with Galen the physician, and Ulpian the jurist, among the guests. It consisted of 15 books, but only the 1st and 2d, and part of the 8d, 11th, and 15th, are now extant in an epitome, of which we know neither the date nor the author. Notwithstanding its many literary and artistic defects, the great mass of information which it contains, and the light which it throws on the manners of the ancients, will

ever cause the *Deipnosophists* to be prized by the scholar and the antiquary. The best edition of this work is that of Dindorf, in 8 vols., 8vo, Leipzig, 1827. An English version of it will be found in Bohn's Classical Library, which has at least the merit of being faithful.

ATHENAGORAS, a Grecian philosopher, who became a convert to Christianity, and flourished probably in the reign of Marcus Aurelius, and his successor. It is said that he was a native of Athens, and first master of the catechetical school at Alexandria. His conversion was brought about as follows. Intending to write against the Christians, he applied himself to the study of the Holy Scriptures, but soon becoming convinced of their truth, he abjured Paganism, and embraced the religion which he had purposed to assail. He afterward addressed an apology to one of the emperors in behalf of the Christians, in which he refuted the charges of atheism, profligacy, and cannibalism, that had been advanced against them. He also wrote a treatise in defence of the doctrine of the resurrection, in which he proves that the presumptive arguments against it are inconclusive. These works of Athenagoras are still extant. Their style is Attic and elegant. The best edition is that of the Benedictines, Paris, 1743.

ATHENAS, PIERRE LOUIS, a French agriculturist, born at Paris, February 8, 1752, died March 11, 1829. He was a pupil of Buffon and Daubenton. In 1786 he settled at Nantes, where he remained until his death. He revolutionized the agriculture of the department Loire Inférieure, naturalized there the Guinea grass, invented a plough which brought him the gold medal of the academy of sciences, beside other services to rural economy.

ATHENION, a native of Cilicia, one of the chiefs in the servile war of Sicily under Salvius. He affirmed that the gods had commissioned him to deliver Sicily. Salvius, becoming jealous of him, threw him into prison, but he was released previous to the indecisive battle with Lucullus. He was finally defeated and killed by the Roman consul, M. Aquilius, 101 B. C.

ATHENS. In the history of civilization, Athens stands preëminent in the variety, and splendor, and permanency of her contributions to the progress of humanity. The great names that adorn her history, whether native or adopted, surpass in number and brilliancy those which have graced the annals of any other city. In statesmanship and war, in arts and eloquence, in practical skill and chastened taste, Athens still stands unrivalled among the cities of the European world.—Athens was anciently the principal city of Attica, and is now the capital of the kingdom of Hellas. It is situated in lat. 37° 56' N. long. 28° 38' E., in the plain of Attica, about 4 miles from the east coast of the Saronic gulf, and 4½ miles from the port town of Piræus. It was built round a central rocky height, called the Acropolis. This is an elevation about 300 feet above the average level of the town, and 600 feet

above the level of the Mediterranean. Grouped near it are several smaller elevations, with valleys between. North-west of the Acropolis is a moderate height on which stands the temple of Theseus. At a short distance from the north-west angle, is the Areopagus; and over against the Areopagus is the hill of the Pnyx, with the hill of the Nymphs a little north, and the museum, or hill of the Muses, at a short distance to the south. North-east of the city rises the conical hill of Lycabettus, forming a remarkable object in the landscape. The plain itself, in which the city stands, is bounded on the N. by Mt. Parnes, which separates it from Boetia, on the N. E. by Mt. Pentelicon, on the S. E. by Mt. Hymettus, which descends to the sea, on the S. W. and W. by the Saronic gulf, and on the N. W. by Mt. Ægaleos.—No doubt a stronghold on the rock, afterward called the Acropolis, was the germ of the city of Athens. Many ancient cities, not only in Greece, but in other parts of the eastern world, may be traced to a similar origin. They are built at some distance from the shore, that they may be out of the reach of pirates; and on or around a rocky height, that the inhabitants may have a place of refuge against the attacks of marauders by land. The Acropolis of Athens, and the Acropolis of Corinth, are among the most remarkable specimens of this manner of city building.—Probably the first settlement was made by some chieftain who fortified himself on the summit, and whose followers, with an agricultural population, occupied the grounds adjacent to the foot of the hill. By degrees, a community was formed, not unlike the baronial establishments of the middle ages. But all the details of the origin and growth of Athens are lost in the darkness of an unfathomable antiquity. Numerous legends, however, having a basis in historical truth, gathered in the course of ages around the Acropolis, and were embodied in the poetical literature, and in the works of art, the renown of which has filled the world.—According to these legends, Cecrops, sometimes represented as an Egyptian settler, sometimes as an autochthonous Pelasgian hero, first took possession of the rock, which from him was called Cecropia. He was succeeded by a line of 16 kings, bearing the names of Oranæus, Amphictyon, Erichthonius, Pandion, Erechtheus, Cecrops II., Pandion II., Ægeus, Theseus, Menestheus, Demophon, Oxyntes, Aphidas, Thymetes, Melanthus, and Codrus. In the reign of the second or third king, the city is said to have received its name from the protecting goddess Athens—the name which it has never ceased to bear to the present day. Erechtheus is said to have built a temple to Athena on the Acropolis, where he placed the statue of the goddess, made of olive-wood—the ancient Athena Polias—and where he was himself buried. Homer speaks of the house of Erechtheus and the temple of Athena (Il. ii. 546). The temple was called, from this legend, the Erechtheum; and the name is perpetuated in the Erechtheum of Pericles, the ruins of

which form a conspicuous object on the Acropolis. Theseus is, however, the favorite among the legendary kings of Athens. He is said to have united the 12 communities, or cities, into which Attica was hitherto divided, into one political body, and to have laid the foundation of those institutions which, remodelled by the legislation of Solon, and made still more popular by the democratic tendencies of subsequent legislation, existed, with occasional interruptions, through the entire historical existence of ancient Athens. The memory of Theseus was perpetuated in after ages by the beautiful temple which bears the name of Theseum, and which still stands, in better preservation than any other building of the ancient city. Menes-theus led the 50 dark ships of the Athenians in the Trojan war, and is pronounced by Homer the first of warriors, except Nestor. The 17th and last king of Athens was Codrus, who sacrificed himself for his country in a war with the Peloponnesian invaders, who, according to an oracle, were to be victorious if they did not slay the king of the Athenians. After him, no one, so the legend says, was permitted to bear the title of king. His son, Medon, succeeded him under the name of archon, or ruler, holding the office, however, upon the hereditary principle, and for life. A line of life archons continued to rule through 12 reigns, Alcmaeon being the last. During the government of his predecessor, *Æschylus*, supposed by some to be the ancestor of the poet *Æschylus*, commenced the era of the Olympic games, celebrated at intervals of 4 years, at Olympia in Elis, and affording a convenient period for the computation of chronology. This date—the earliest fixed point in Greek chronology—has been satisfactorily established at 776 B. C.—After Alcmaeon, the time of the archonship was changed to the term of 10 years, and a series of 7 decennial archons carried on the government until 688 B. C., when a further change was made, and the office was made annual, its various functions distributed among 9 colleagues, and the right of election extended to the entire class of the eupatridæ, or nobles. One of these—the head of the college—bore the title of *the archon*, and was designated as the eponymus—a magistrate in whose name the transactions of the year were dated, and recorded. The office of archon lasted until long after the independent political existence of Athens and Greece had come to an end, and was sometimes held by distinguished Romans, on whom the rights of Athenian citizenship had been conferred.—There is no complete list of the annual archons preserved. Between 684 B. C. and 292 B. C.,—that is, from Creon, the first annual archon, to Philippus, the last recorded name, there should be 392 eponymic names; out of these, however, only about 236 are known. Between 485 B. C. and 294 B. C., the list is unbroken.—The only important political body existing at Athens, at the time of the first appointment of life archons, was the senate or council of Areopagus, which appears to have

been, in its earliest constitution, the representation of the Homeric *Boule*, and until the time of Solon, was called simply the *Boule*, or senate. In the course of time, the oppressions and abuses of the eupatridæ gave rise to popular discontents, and Draco was appointed, 624 B. C., to draw up a code of written laws. He made no change in the political forms; but merely attempted to introduce a code of laws, the unwise severity of which made it impossible to execute them. Twelve years after Draco's legislation, Cylon, a distinguished and ambitious member of the eupatrid order, attempted to usurp the supreme power of the state, and occupied the Acropolis with a strong body of his partisans; but the conspiracy failed. Cylon escaped, and his partisans, who had taken refuge, some at the altar of Athena, others at the altar of the Eumenides, were put to death by the direction of Megacles, the representative of the house of the Alcmaeonidæ. This act was supposed to have brought upon that illustrious race the curse of the gods, and they were expelled from the city in 597 B. C. Epimenides, the Cretan sage, was invited to purify the city from the pollution of sacrilege by expiatory rites. His visit is placed in 596 B. C.—The glory of Athens as a political commonwealth dates from the age of Solon, who was born about 638 B. C., of the most illustrious descent in Athens, since Codrus, the patriot king, was his ancestor. The virtues of his character, and his intellectual endowments and high culture, corresponded to the greatness of his birth. In 600 B. C., he reconquered Salamis by driving the Megarians out of the island. Afterward, being sent to the Amphictyonic council, he maintained the cause of the Delphian oracle against the Amphiclians of Cirra. At Athens, the citizens were divided into violent parties, and the lower classes were reduced to the most abject poverty. Many of them were reduced to slavery, or sold to pay their patrician creditors, and there was imminent danger of insurrection and civil war. Solon was chosen archon in 594 B. C., with unlimited powers to make any changes in the constitution of the state which might appear to him necessary for the public good. He devoted himself to this august task with all the force and sagacity of his vast intellect, and with a disinterested devotion to the highest good of his country, rarely equalled in the history of man. His political labors have exercised a wider and a deeper influence upon the governments of the most civilized nations, than those of any other legislator. His first act was a measure of relief for the oppressed classes, somewhat of the nature of a modern bankrupt law. He then proceeded to frame a constitution, establishing and defining the limits, conditions, and rights of citizenship, and the legislative, judicial, and executive bodies in the state. Heretofore, the principle of birth constituted the title to political power; he changed it from birth to property; from an oligarchical, to a timocratical system. This was a long step

toward the establishment of a democratic constitution, and was so generally acknowledged by Athenian statesmen of subsequent ages, that they habitually spoke of Solon as the founder of the democracy. He divided the citizens into 4 classes, according to property: 1. The *Pentecosiomedimni*, or those whose annual revenue was equal to 500 medimni of corn and upward. 2. The *Hippeis*, or knights, whose income ranged between 300 and 500 medimni, and who were sufficiently wealthy to furnish a war-horse. 3. The *Zeugitai*, whose income ranged between 200 and 300 medimni, and who were able to keep a yoke of oxen. 4. The *Thetes*, whose incomes fell short of 200 medimni. This 4th class were exempt from taxation, and excluded from public office, but they served as light troops in the army. Only the first class were eligible to the higher offices of the state; the 2d and 3d classes filled the inferior offices; the 2d class served in the army as horsemen, and the 3d as heavy-armed foot soldiers. All classes had the right of voting in the public assembly, which elected the archons and other magistrates. Solon established another legislative body called the senate or council of the Four Hundred, elected by the assembly, 100 being taken from each of the 4 tribes, into which the people were divided long before Solon. The court of the Areopagus was endowed by Solon with enlarged powers, and with the general supervision of the conduct and lives of the citizens, and the institutions of the state.—These were the principal institutions of the great lawgiver. His laws were inscribed on wooden rollers and tablets, and preserved first in the Acropolis, and afterward in the Prytaneum. We have only a few fragments of the original enactments; but it is probable that the leading principles of the code were embodied in the subsequent legislation of the Boule and the Ecclesia. Having completed his legislative labors, Solon bound his countrymen to abide by his enactments for 10 years, and left his country immediately for foreign travel. During his absence, Pisistratus, his kinsman, availed himself of the dissensions which broke out anew, to make himself master of Athens, and on his return, the schemes of the aspiring citizen had been already carried so far, that even Solon's influence was insufficient to thwart them. Pisistratus seized the Acropolis in 560 B. C. Solon remained unmolested at Athens, and died soon afterward, at the age of 80.—Notwithstanding the irregular and unconstitutional means by which Pisistratus acquired power, he made, on the whole, a wise and liberal use of it. He adorned Athens with many public works; he laid the foundations of the great temple of Olympian Zeus, south-east of the Acropolis, the ruins of which to this day excite the wonder of the traveller. He collected a public library, and called around him the most distinguished poets, artists, and scholars, from every part of Greece. He died 527 B. C., having administered the government for about 33 years, with the exception of

10 years passed in exile. His power descended to his 2 sons, Hippias and Hipparchus, who carried on the government in accordance with the same principles as their father. Their government was overthrown by the conspiracy of Harmodius, and Aristogiton. Hipparchus was slain 514 B. C., and Hippias, escaping death, became a suspicious tyrant, and at length was compelled to quit Athens, 510 B. C. He sailed to Asia. The memory of the tyrannicides was cherished with extraordinary fondness by the Athenians, as may be seen in the famous drinking song—

In a myrtle bough I'll bear my sword,

and their statues were erected near the ascent of the Acropolis. Clisthenes and Isagoras were now rivals for power, and the constitution of Solon, under the forms of which Pisistratus and his sons had carried on the government, went for a time into full operation. Clisthenes, however, soon found the necessity of introducing some popular changes in the constitution, and of extending the right of sharing in public affairs to a larger number of the citizens. He accordingly reorganized the people by dividing them into 10 tribes, instead of the old Ionic 4 tribes; and these 10 tribes were local, and were subdivided into districts or townships called *demes* (*δημοι*). We find the names of about 174 of these small local divisions. It was customary to designate every citizen by affixing to his name the epithet indicating the *deme* to which he belonged. The senate was also changed, and its powers and duties greatly increased. It now consisted of 500 members, 50 being taken from each tribe. The general control exercised by the people over the affairs of government, through the Ecclesia, was also greatly enlarged. Fixed times were established for the meetings of this body, to discuss and decide their own affairs, and the powers of the archons were reduced in proportion. The judicial powers of the people were ascertained by the establishment of the Heliastic courts, of which 10 were organized, either by Clisthenes, or soon after his time. The new arrangement of the tribes led to a new arrangement of the military service, the administration of which was placed in the hands of 10 generals, one being chosen from each tribe. With them was associated, however, the polemarch, or 3d archon, who under the old constitution held the exclusive military command. The ostracism was also introduced by Clisthenes, which, notwithstanding the vindication of the institution ingeniously attempted by Mr. Grote, remains a monument of popular injustice.—Under these institutions, the city of Athens, as well as the state of which it was the political head, soon began to put forth the signs of a vigorous prosperity, which excited the jealousy of Sparta. The Spartans made several attempts to overthrow the growing democracy. Their first plan was to establish Isagoras, the rival of Clisthenes, as tyrant of Athens; but the expedition

set on foot to accomplish this purpose failed through the dissensions of the 2 Spartan kings and their allies, and the Athenians took advantage of their retreat to conquer the Chalcidians, in Eubœa, and to divide the conquered lands among the needy classes of their own citizens. The Spartans now made another attempt by organizing a plan for the restoration of the exiled Hippias;—the commencement of that series of events which resulted in the Persian invasions of Greece. The history of the Greek colonies belongs to another place. We must content ourselves here with 2 or 3 remarks. At an early period, the stream of emigration set eastward, and the fertile region of Asia Minor was occupied by a line of colonial settlements, along the southern and western coasts, including the adjacent islands. The northern line of settlements were those of the Æolian race, the central of the Ionian, and the southernmost, the Dorian. These Greek-Asiatic states soon rose to a high degree of external prosperity and intellectual culture. The art of poetry especially flourished in those happy regions, with great luxuriance, and the poems of Homer, not to mention the Lesbian Sappho, and the Ionic successors of the bard of Chios, stand at the head of European literary culture, and have never been surpassed, if they have ever been equalled, in the department of the art to which they belong. The Greeks of Asia Minor naturally were brought into contact, friendly or hostile, with the Asiatic monarchies in their neighborhood—the Babylonians, Medes, Persians, and especially the Lydians. Under the reign of Croesus, in the first half of the 6th century B. C., the Greeks of Asia Minor were reduced to subjection, and his capital, Sardis, became the centre of wealth and refinement, and the resort of sages and poets from the Hellenic world. The Persian empire owed its rise to power to the genius of Cyrus, who conquered the Medes and the Lydians, and joined the Greek cities of Asia. Cyrus died 529 B. C., leaving his empire to his son Cambyses. His successor was Darius, who ascended the Persian throne 521 B. C. About the year 500 B. C., serious difficulties commenced between the Ionian cities and the Persian monarchy, and the aid of the Greeks at home was invoked. The Athenians showed a ready sympathy with their Ionian kinsmen, and were incensed at the imperious orders of the Persian satrap, Artaphernes, that they should recall Hippias. An Athenian fleet was sent across the Ægean; a sudden march was made upon Sardis, and the city was burned. The Ionian revolt soon after this event reached its height, and Darius made vigorous preparations to suppress it, and to punish the Athenians who had so readily aided the insurgents, and whose name he appears never before to have heard. The fall of Miletus, 495 B. C., was followed speedily by the subjugation of all Ionia. Preparations were now made to punish the Greeks, and especially the Athenians, for the part they had taken in supporting the re-

volt. The first expedition failed miserably, the Persian fleet having been wrecked in attempting to double the promontory of Athos, and the army of Mardonius being defeated with great slaughter by the Brygians in Macedonia, 492 B. C. Darius was not turned from his purpose by this disastrous result. In 490 B. C., he had assembled a vast army and a fleet of 600 galleys. Datis and Artaphernes were placed in command, with orders to subdue all Greece, and especially to burn the cities of Eretria and Athens, and to bring their inhabitants to Persia, as slaves. They made directly across the Ægean for Eubœa. Eretria defended herself for 6 days, but on the 7th was betrayed by 2 of the citizens. From Eretria, Datis proceeded, under the guidance of Hippias, who had joined the army, to land on the plain of Marathon, in the expectation of speedily accomplishing the destruction of Athens. Among the 10 generals of this year at Athens, were the illustrious citizens, Miltiades, Themistocles, and Aristides. As soon as the fall of Eretria was known, a messenger, Phidippides, was sent to Sparta to ask for aid, and a military force was marched over to Marathon, about 28 miles distant, on the eastern coast of Attica. The Spartans did not start in season to take part in the battle, being detained at home several days by a superstitious scruple which forbade them to commence a march before the full moon; but the little town of Plataea sent its whole military force, consisting of 1,000 heavy-armed men, being moved thereto by a grateful recollection of the aid extended by Athens in a former period of distress. The generals were divided in opinion as to the expediency of immediately attacking the formidable host of the Persians; but Miltiades, Themistocles, and Aristides warmly urged the attack, and influenced Callimachus, the polemarch, who had the casting vote, to give it in favor of battle. Fortunate for the history of the world, that manly counsels prevailed. We need not dwell upon the incidents of the momentous conflict; they are among the commonplaces of history. The Persians were defeated and driven into the sea. The poet Æschylus was one of the heroes of the day. Those who fell were buried on the spot; a mound was raised over their remains; their names were recorded on 10 columns, one for the dead of each tribe; they were celebrated in song as the champions of Hellas:

At Marathon for Greece the Athenians fought,
And low the gilded Medians' power they brought.

The columns have vanished, but the verses of Simonides remain; and the mound still stands on the plain of Marathon, an object of deathless interest to the traveller. Miltiades was honored with a separate monument, and his figure stood foremost in the picture of the battle with which the *Poikile* was adorned. Thus ended the second attempt of the Persians to subjugate Greece. In the Saronic gulf, about 12 miles west from the coast of Attica, lies the picturesque and hilly island of Ægina. In an-

cient times it, was rich, populous, and flourishing, and was a formidable rival to Athens, by reason of its extensive commerce. The inhabitants were of Dorian descent, and this circumstance probably added bitterness to the ancient feud. *Ægina* was one of the states that submitted to the demands of Persia, by the symbolical act of giving earth and water to his envoys. They were complained of to the Spartans and the Athenians for this desertion. Cleomenes, the Spartan king, was dispatched with orders to arrest the leaders. He was prevented from executing the order by the intrigues of his associate, Demaratus; but, having caused Demaratus to be deposed, he succeeded in a second attempt, and placed 10 of the leading citizens of *Ægina* as hostages at Athens. After the battle of Marathon, the *Æginetans* endeavored to recover these hostages, but without success, and hostilities broke out between the two states. Themistocles made this the occasion for urging upon his countrymen the importance of building a fleet, as the only means of coping with their adversary, and with the sagacious view of meeting the Persians on the sea, who were already making large preparations for another invasion of Greece. Two hundred triremes were accordingly built. It was not until 10 years after the battle of Marathon that the Persians completed their preparations. They were made on the most formidable scale. In 480 B. C., Xerxes, with his innumerable hosts, crossed the Hellespont, and commenced his southward march through Thrace, his fleet moving along the coast, in concert with the army. The battle of Thermopylæ was fought, and the pass, after a desperate resistance, forced. A second time the genius of Simonides commemorated, in a few pregnant and immortal verses, the exploits of Hellenic valor; but now it was the Spartans who were the subject of his mighty line:

Stranger, the tidings to the Spartans tell,
That here, obeying their commands, we fell.

The Persian fleet suffered the loss of 400 ships by a terrible hurricane off the coast of Pelion; and, soon afterward, they encountered the Greek fleet near Artemisium, and, though the victory was not clearly decided, suffered severely in the encounter. After the battle, the Greek fleet withdrew through the strait of Eubœa, sailed round the promontory of Sunium, and took up a position on the eastern side of the island of Salamis. The army of Xerxes, mean time, was rapidly marching upon southern Greece, and would reach Attica in a few days. The oracle of Delphi had warned the Athenians to fly to the ends of the earth. A second response intimated that the wooden walls would shelter them when all was lost. The Athenians removed their women and children to Salamis, *Ægina*, and Trœzen, on the opposite coast of the Saronic gulf, and made vigorous preparations to meet the shock of the Persian fleet. Some, however, took refuge behind the wooden barricade of the Acropolis. The Persian host, on

arriving at Athens, took up their position on the Areopagus, which is separated from the north-west angle of the Acropolis only by a narrow valley, and assailed the wooden ramparts with burning arrows; but this failed to bring the intrepid defenders to terms. At length they gained the summit by climbing the steep rock on the northern side, near the cave of Aglauros; the temples and other buildings on the Acropolis were pillaged and burned, and the defenders slain. The Persian fleet, about the same time, reached the bay of Phalerum. By the influence of Themistocles, the Greek fleet awaited them at Salamis; a great battle was fought, in which the Persians were disastrously routed, 40 ships being lost on the side of the Greeks, and 200 on the part of the Persians. We have a brilliant description of this battle in the "Persians" of *Æschylus*, who fought here as well as at Marathon. Xerxes immediately began his homeward march, leaving Mardonius to prosecute the war in the following spring. The Athenians returned to the city, and at once commenced rebuilding it. They rejected the tempting offers of the Persian commander, who hoped to detach them from the Hellenic alliance. He again took possession of the city in the summer of 479 B. C. The Spartans, who had been selfish and lukewarm, were now thoroughly roused to their danger, and hurried a large army to the frontiers, and Mardonius retreated into Boœtia. The battle of Plataeæ, and the death of Mardonius, put an end to all further danger for the present. The bravery and magnanimity of the Athenians during these severe struggles, justly gave them a most commanding position among the Greek states, and laid the foundation of the hegemony, or headship, which they exercised during the interval between the Persian invasion and the Peloponnesian war. Many of the Greek states of Asia Minor and the islands of the *Ægean*, formed a league for the common defence, and acknowledged the leadership of Athens, by agreeing to pay a contribution of money or ships, she undertaking the duty of protecting them, by her powerful fleet, against the barbarians. This was called the confederacy of Delos, because the contributions were to be deposited there, under the charge of certain officers called Hellenotamias. The contributions were at first assessed by Aristides, whose reputation for justice commanded the confidence of all. In 470 B. C. the island of Scyros was conquered and colonized by Cimon, and the bones of Theseus carried thence to Athens, by command of an oracle. They were placed, with solemn ceremonies, in the consecrated precincts of the Theseum, a temple erected in honor of the national hero, and to this day one of the most beautiful ornaments of the city. The rebuilding of Athens on a larger scale, and with stronger defences, excited the jealousy of the *Æginetans* and the Spartans, and attempts were made to interfere. These were frustrated

by the policy of Themistocles. The city was surrounded by massive walls, the fleet was increased, the harbors of Piræus and Munychia were fortified with walls and towers, vast ruins of which remain to this day. The walls of Athens, inclosing the *Asty*, or town proper, included the Museum, the *Pnyx*, the *Areopagus*, the *Acropolis*, extended north-east nearly to the foot of *Lycabettus*, probably crossed the *Ilissus*, enclosed the *Stadium*, recrossed the *Ilissus* at a point south of the *Acropolis*, and then ran west of the hills above mentioned. There is, however, a difference of opinion among antiquaries as to some of the details of the walls, and their extent, but as no trace of them now remains, the only mode of coming to a probable conclusion is by carefully studying the topographical hints of the ancient authors. The line above indicated seems to answer best all the conditions of the problem. Forchhammer, the eminent German, and Col. Leake, the admirable author of the topography of Athens, are the principal modern authorities. Col. Leake gives the walls a less extent, especially on the southern side, but the views of Forchhammer have been generally acquiesced in. Among the ancients, the most exact description of the walls, as they stood at the opening of the Peloponnesian war, is that given by Thucydides (lib. ii. 18). The long walls, connecting the city with Piræus and Phalerum, were commenced in 457 B. C. and completed in the following year, the object being to surround the port, town, and the city with an unbroken series of fortifications. At a later period, an intermediate wall, parallel to the northern or Piræic wall, at the distance of 550 feet, was built, under the direction of Pericles, and the southern, or Phaleric wall, seems to have been suffered to go to ruin. A carriage road from Piræus to Athens was constructed between the long, or parallel walls, and houses were allowed to occupy the spaces at the sides. The length of the wall surrounding the city was about 8 miles, the Piræic and Munychian walls about as much more, and the long walls about 4½. Considerable uncertainty exists as to the number, position, and names of the city gates. The names of 11 have been preserved, and the situation of some of them has been made out with a good degree of probability. The gates mentioned are the *Dipylum*, the *Sacred gate*, the *Piræic gate*, the *Melittian gate*, the *Ionian gate*, the gate of *Diochares*, the *Diomeian gate*, the *Herian gate*, the *Acharnian gate*, the *Equestrian gate*, or the gate of *Ægæus*. The first 4 were on the western side of the city; the *Ionian* on the southern; the gate of *Diochares*, and the *Diomeian*, on the eastern; and the 3 last mentioned in the list on the northern side.—The progress of Athens in letters and arts, in the period of her hegemony, was wonderful; but the most brilliant age of her brilliant career was that of Pericles, who, born of the noblest Athenian lineage, and educated under the ablest masters, came forward as a popular leader in 469 B. C.

He was the most eloquent in public debate; the most accomplished in literary and philosophical acquirements; the most far-seeing and profound of all the statesmen of his time. He commanded several military expeditions, and exhibited the qualities of a consummate general. He had a handsome and dignified person, a sweet and powerful voice, and a most persuasive manner. Aristophanes says, "he thundered and lightened and stirred up all Greece." Of his eloquence, only a few sentences, quoted by Plutarch, remain, if we except the speeches recorded in Thucydides, which do not purport to be literally such as he delivered them. The best character of this great man is the one drawn briefly and tersely by Thucydides. "The cause of his influence," says that great writer, "was that, powerful in dignity of character and wisdom, and having conspicuously shown himself the most incorruptible of men, he curbed the people freely, and led them instead of being led by them. For he did not speak to their present favor, endeavoring to gain power by unbecoming means, but dared to brave their anger while holding fast to his own dignity and honor. The constitution was a democracy in word; but in fact it was the government of the most distinguished citizen." With slight interruptions, the administration of Pericles, as we may call it, lasted from 469 to 429 B. C.—the long period of 40 years. The government was carried on through the usual agencies. Pericles held no permanent office, though he was often appointed to places of trust and honor by the popular vote. He maintained his lofty station solely by the force of character, and by extraordinary ability. In his time, every branch of literature flourished. The great names of *Æschylus*, *Sophocles*, *Euripides*, *Aristophanes*, in dramatic poetry; of *Phidias* and his school in plastic art; of *Anaxagoras* and *Socrates* in philosophy, are connected with this period. The treasury of *Delos* was removed to Athens, the amount of contributions increased beyond the assessment of *Aristides*, and the Athenians, having assumed the protection of the confederacy, assumed also the right of using the funds for any purpose they pleased. The policy of Pericles was to make Athens not only the political head of the states, but the centre of art and literature—the school of civilization. Public buildings of extraordinary splendor were erected by the ablest architects. The temple of *Theseus* was already completed, the exquisite little temple of the *Wingless Victory*, on the right of the ascent to the *Acropolis*, was probably built in the time of *Cimon*. The temple of the *Olympian Zeus*, begun by the *Pisistratidæ*, had been neglected, and was not yet finished. The great structures of the *Periclean age* were, the *Odeum*, finished 444 B. C., the *Parthenon*, 387 B. C., the *Propylææ*, 482 B. C., the *Erechtheum*, which was not quite completed at the breaking out of the Peloponnesian war. This magnificent system of public works was under the general su-

perintendence of the sculptor Phidias. The architects of the Parthenon were Ictinus and Callicrates. Mnesicles was the builder of the Propylæa. Plutarch gives an animated description of the busy aspect of the city while these works were going on: "Then the mechanics were not without their share of the public money, nor yet received it to maintain them in idleness. By the building of great edifices which require many arts and a long time to finish them, they had equal claims to be recompensed out of the treasury with the mariners, soldiers, and garrison troops, though they stirred not from the city. For the different materials, such as stone, brass, ivory, gold, ebony, and cypress, furnished employment to carpenters, moulders, braziers, stonecutters, goldsmiths, ivory painters, turners, fancy workers, and other artisans; those employed in transporting the materials by sea, such as merchants, sailors, and pilots; and those employed on land, such as wheelwrights, wagoners, drivers, ropemakers, linen-workers, leather-cutters, road-makers, iron foundry, and every art and trade had its subordinates ranged in proper order, to execute the commissions, like soldiers under the command of a general. Thus, by the exercise of these different trades, was plenty diffused among persons of every rank and condition." The works of Phidias are still the teachers of the purest principles of sculpture. The Parthenon reveals perfections in artistic skill and the practical application of scientific principles, which have never been approached in any modern structure. The buildings of the Acropolis, and the innumerable other works of art which were accumulated there, made that rocky height not only the centre of Hellenic religion, but the noblest gallery of art in the ancient or modern world. The embellishment of the city and the progress of its political power, as well as of its commercial prosperity, were interrupted by the fatal Peloponnesian war. The jealousy of Sparta was excited by the overshadowing power of her ancient rival. The hostile feeling was increased by enmity of race, the Spartans being the conspicuous representatives of the Dorian stock, and the Athenians of the Ionian; and by differences of political organization and domestic institutions. The contrast between the two characters, and the respective influences under which they were moulded, are nowhere so ably drawn as in the funeral oration by Pericles. The orator, while commending the generous and liberal spirit of the Athenian institutions, silently points to the opposite characteristics of those of Sparta. The citizens not only enjoyed an equality of rights before the law, but cherished a noble confidence in each other in private life; they cultivated obedience to the magistrate, and a fine sense of honor, which submitted to the unwritten laws of noble conduct, both from the self-respect of gentlemen, and from a sensibility to the shame attached to their violation by public opinion. "For such a country the heroes of past ages laid down their lives, receiving

a most distinguished sepulchre, not so much that in which their bodies lie buried as that in which their glory, on every occasion of word or deed, shall be held in everlasting remembrance. For of illustrious men the whole earth is the sepulchre, signalized not alone by the inscription of the column in their native land, but in lands not their own, by the unwritten memory which dwells with every man, of the spirit more than the deed." The Peloponnesian war broke out 481 B. C. The Lacedæmonian troops ravaged the plain of Athens, and the inhabitants of the country crowded into the city. In the next year, 480 B. C., a second invasion took place, and the plague, so powerfully described by Thucydides, carried off not less than a fourth of the inhabitants, beside causing the most frightful demoralization. The children of Pericles were among the early victims, and the great statesman himself was carried off in the following year, leaving no one to take his place. "Those who came after him," says Thucydides, "being more on an equality with one another, and each eager to stand foremost, made it their aim to gratify the passions of the people, and to this object sacrificed the public interest." This is not the place to relate the varying fortunes of this long and most disastrous war—the expedition sent out by Athens to Lesbos; to Sphacteria; to Thrace; the truce for a year; the banishment of Thucydides, who afterward made his name immortal by his history; the truce agreed upon for 50 years, which lasted only nominally 7 years, and really hardly one; the expedition to Sicily, which commenced with so much pomp and splendor, and such vaunting expectations, and ended so deplorably in the third year; the occupation of Decelæia by the Lacedæmonians; the revolt of Lesbos; the overthrow of the democracy, and the establishment of the council of the Four Hundred; the battle of Arginusæ, and the condemnation of the generals; the defeat of the Athenians at Ægospotami, which led to the surrender of Athens in 404 B. C., to the Spartan general Lysander. The democracy, which had been restored, was again abolished, and a government of Thirty established, under the control of Sparta, known in history as the Thirty Tyrants. The cruelties and excesses of this odious oligarchy are related by Xenophon, who took up the history of Athens at the point where that of Thucydides breaks off. The walls of Athens were demolished by the Lacedæmonians, the arsenals and docks at Piræus destroyed, and the political exiles favorable to oligarchy were restored. But the period of oligarchical tyranny was destined to be short. A body of exiles, headed by Thrasybulus, were concentrated at Phyle, one of the frontier fortresses in the pass of Mt. Parnes; from thence they proceeded to Piræus and defeated Critias and his troops, and finally overthrew the Thirty and restored the reign of the ancient laws. But the disasters of Athens in this terrible war struck so deeply at the roots of her power and greatness that she never fully

recovered from them. Thenceforth her career, though glorious in many respects, and though her influence was partially restored, was one of struggle against superior and hostile forces. Yet it is singular that the intellectual activity of this highly gifted race does not appear to have abated even during the most calamitous years of the war. Dramatic and lyric contests for the prize took place yearly; the splendid games and the religious pomps were celebrated; the arts were cultivated and practised, as if no external troubles were exhausting the resources of the state, and preparing her downfall. And after the war was over, and the democracy was restored, the city was again as before the centre of cultivated society: the favorite home of poets and philosophers, and the school of the arts. Political eloquence flourished even with greater brilliancy than in the days of the Attic supremacy; for in the next great struggle, the genius of Demosthenes shone with unrivalled splendor. Dicaearchus, a contemporary of Aristotle and Demosthenes, and the author of a work on the "Life of Hellas," says in a fragment of that book, that Athens was ill supplied with water, and irregular, on account of its antiquity; the houses (*i. e.* the private dwellings) generally mean and insignificant; so that a stranger would at first hardly believe this to be the celebrated city of Athens. But when he should behold the superb theatre; the costly temple of Athena, called the Parthenon, overhanging the theatre; the temple of Olympian Zeus, which though unfinished, fills the beholder with amazement by the magnificence of its plan; the three gymnasia, the academy, the lyceum, and the cynosarges, all of them shaded with trees, and embellished with grassy lawns; having witnessed the haunts of the philosophers, and the various schools, and the festive scenes by which the cares of life are cheated of their prey, he would have another impression, and would believe that this was in very truth the famous city of Athens. The hospitalities of the citizens make the stay of the stranger agreeable. The city abounds with supplies for every want, and the means of gratifying every desire. The neighboring towns are but suburbs of Athens. The inhabitants are forward to recognize the claims of any artist; and though among the Attics there are busy-bodies and gossips, who pass their time in spying out the way of life of strangers, yet the genuine Athenians are magnanimous, simple in manners, trusty friends, and accomplished critics. In the arts, in short, as much as other cities excel the country in the means of enjoyment, so much does Athens surpass all other cities. As Lysippus says:

Has't not seen Athens, then thou art a log,
Has seen and not been charmed, thou art an ass.

—The period between 408 B. C. and 360 B. C., usually designated as that of the Spartan and Theban supremacy, is signalized by the extraordinary adventures of Xenophon, the Athenian, in the expedition of Cyrus the younger,

and the retreat of the Ten Thousand, and the war of the Lacedæmonians, under Agesilaus, in Asia Minor; the Corinthian war; the peace negotiated by Antalcidas and bearing his name in history, 387 B. C.; the partial reorganization of the Athenian confederacy; and by numerous distant expeditions, both by the Lacedæmonians and the Athenians. The principles of the new confederacy were substantially the same with that of Delos. The states and cities composing it were to be politically independent, and the common affairs were to be placed in the hands of a body of deputies, meeting in congress at Athens. Demosthenes was born in the Deme of Pæania, near Athens, in 383 B. C., the year of the first attack upon the Olynthians by the Spartans. Isocrates, the Athenian rhetorician, was writing and publishing his political discourses, especially the elaborate eulogy on Athens and her institutions, entitled the *Panegyricus*. In 361 B. C. a general peace was concluded by consent of all parties except the Lacedæmonians; but in the following year, the Athenians went to war with the Olynthians, for the possession of Amphipolis, and this war brought them into collision with the formidable power of Macedonia, under the able lead of Philip, and after his death, under that of his still abler son, Alexander. The period of struggle between Athens and the Macedonian power, is not only very important in the history of the city, but in some respects is the most brilliant for the intellectual achievements of the great Athenian leaders. Political eloquence, which had long flourished under the influence of the democratical constitution of Athens, reached and passed its culminating point, in the orations of the political leaders, which fortunately have come down to us. Of course, those of Demosthenes stand at the head, not only of Greek and Roman eloquence, but of the political eloquence of the free nations of modern Europe. Philip and Demosthenes were probably born in the same year, 383 B. C. Philip succeeded to the throne of Macedonia at the age of 23, and in the same year Amphipolis was declared a free city, and peace was made in 359 B. C. In the next two years Amphipolis was taken; the Athenians sent an expedition to Euboea; Chios, Rhodes, Byzantium revolted from Athens; the Phocians seized Delphi; and the so-called Sacred War commenced. In 356 B. C. Alexander was born, and Potidaea was taken by Philip. In 355 B. C. the war between Athens and her former allies was concluded, and in the following year, 354 B. C., Demosthenes began his career as a *rhetor* or statesman, and made public speeches in the assemblies at the age of 28, having already appeared before the dicasteries, or courts, in several civil causes. He had educated himself carefully for a political career, although he had been left an orphan at a tender age, and his inheritance had been partly squandered by his faithless guardians. The first exhibition of his

remarkable ability was given as soon as he reached the legal age, in the prosecution of his guardians. The arguments delivered by him before the court are distinguished by clearness of statement, chasteness of style, and logical power. They are business speeches, and give us not only a high idea of the talent of the young pleader, but of the sedate and rational proceedings of the court before which the cause was tried. Of the special studies of Demosthenes, we know but little. In the oration on the Crown, he speaks of his early education as being that of an Athenian gentleman in easy circumstances. There is some reason to suppose that he was not ignorant of the philosophy of Plato, whom he knew personally and esteemed; and that he was instructed by Isæus, whose style was apparently the model on which the speeches against his guardians were composed. He became a member of the *Boule*, in 354 B. C., and in the same year delivered several public orations. At a very early period he took the ground of uncompromising hostility against the encroachments of King Philip, whom he regarded as a very able, ambitious, and unscrupulous enemy to the liberties and independence of Greece. In the contest that ensued, he never abrank from the perils of his position. The threats of domestic factions, the slanders of private and public foes, the offers of the rich, the blandishments of Philip's agents, had no power to seduce the incorruptible integrity of the great Athenian. In youth he had been of feeble health; he had a voice of no very pleasant quality, and defects of enunciation, both of which seemed to disqualify him from taking part in the debates of the Pnyx, if not from pleading in the courts. But he had received at his birth a genius which no physical difficulties could stifle. His mind was clear and strong, and was well trained by careful study. His passions were subdued to his will by the austere temperance; so that, in after years, his profligate opponents taunted him with being a water-drinker. Strenuous industry conquered his physical deficiencies. The lessons of a noble philosophy, harmonizing with the natural loftiness of his character, gave him a grand style of thought, and inspired him with a profound contempt for baseness and cowardice of sentiment, and weakness of action. He had formed in his mind an august image of his country and her ancestral glories; and as he looked around him from the Bema, the spirits of the great men who had stood on that spot, and whose genius had made Athens what she was—the glory of the Hellenic world—seemed to lift him above all selfish aspirations, and to inspire that sublime political morality, which even now elevates the soul of the reader. The sentiments of national and personal honor, the duty of following the example of illustrious forefathers, of maintaining the proud position once taken as the unshrinking defender of the freedom of Greece, and of leaving the consequences in the hand of God, were never more boldly

proclaimed than in his great orations. The style of Demosthenes is the man Demosthenes. Simple, but at times rising into the loftiest regions of eloquence; calm generally, but impassioned when the occasion justifies passionate expression; nervous; with never a superfluous word; never wandering into loose declamation; sparing of ornament, according to the most rigid requirements of Attic taste; but sometimes employing a striking and beautiful figure, which not only electrifies the imagination, but enlightens the reason; severely logical, and exhibiting every turn of the thought through its texture; as transparent as the stream from the crystal fountain; the style of Demosthenes is the highest perfection of human speech, the admiration of critics, the despair of imitators. The style of Demosthenes was Demosthenes, and it was with this marvellous genius, and the intellectual armor which that genius wielded, enforced by incorruptible patriotism, and courage that never quailed, capacity for labor that never wearied, liberality that never was exhausted, passionate love of Athens that never grew cold, boldness of determination that never hesitated when the judgment was once decided,—it was with this formidable array of hostile forces, gathered and concentrated in one slender, nervous man, that the wealth and military power, and despotic will of Philip, had to contend. In some respects the contest was unequal; but not so unequal as it is sometimes represented. Honor, truth, eloquence, genius, incorruptible integrity, unseduced patriotism, are mighty, and must in the end prevail. The disastrous battle of Chæronea, which killed with report Isocrates, the old man eloquent, placed the fortunes of Hellas in the control of Philip; and later still, after the death of Philip and Alexander, the mercenaries of the Macedonian pursued the exiled Demosthenes to his asylum in the temple of Poseidon, at Calauria, from which he could see the shore of Attica. His asylum was violated; he swallowed poison, and escaped the insults of his enemies by death. How stands the case now? How stand the mighty combatants before the tribunal of posterity? Whose influence is now felt for good? Which has gained the victory in the course of the ages, and on the battle-ground of history? The particulars of the conflict between Athens and Macedonia belong to the general history of Greece, rather than to the sketch of Athens, which is all we can give here. But the life and labors of the great orator and statesman are so identified with the illustrious city, that so grand a figure could not be omitted, even in this brief glance at her fortunes. The battle of Chæronea, between the army of Philip on the one side, and the combined forces of Athens and Thebes on the other, was fought in 338 B. C. When the news arrived at Athens, it produced the liveliest alarm. Measures were instantly taken to place the city in a state of defence, and Demosthenes was elected superintendent of fortifica-

tions. In executing the works committed to his charge, he added a considerable sum from his private fortune to the public appropriations. He was also appointed commissioner for the purchase of corn. The inhabitants of the rural districts were summoned to leave their residences, and take refuge either in the city or in the frontier fortresses of Phyle, Eleusis, and Sunium. An immediate invasion of Attica was expected, and every thing that the most untiring and fearless energy on the part of Demosthenes could do to meet the impending danger, was done. It was made a capital offence to leave the city. Either these vigorous measures of defence, or the deep policy of Philip, prevented him from following up his victory, and Athens was spared the horrors of a siege. His immediate aim was to place himself at the head of the united forces of Greece, and to invade Persia; a scheme that was looked upon with favor by some of the Athenian statesmen. Isocrates had advocated it, placing confidence in the intentions of Philip, until the battle of Chæronea opened his eyes. But all these ambitious purposes of his active and subtle intellect were suddenly ended by his assassination at *Ægæ*, in 336 B. C. The death of Philip, no doubt, was felt as a great relief by the party at Athens, of which Demosthenes was the head, and movements were initiated to throw off the Macedonian supremacy. But Alexander, then a youth of 20, quickly showed that his genius and his ambition were quite equal to his father's. Demosthenes exerted himself to the utmost to heal the dissensions among the Greek states, and to bring about a union against the Macedonians, but all to little purpose. Alexander was appointed to the command of the Amphictyonic forces; the Athenians were obliged to send an embassy to conciliate the haughty youth. A general congress at Corinth clothed him with the office of commander of the army for the Persian war. Disturbances, however, among the Triballians and Thracians, called him to the north, and during his absence an insurrectionary movement took place at Thebes, favored by Demosthenes and his party at Athens. Alexander marched upon the doomed city. It was besieged and taken. Its inhabitants were slain or made slaves, and the houses, except that of the poet Pindar, were demolished. The Cadmeia, or citadel of Thebes, was occupied by a Macedonian garrison. The surrender of the leading Attic orators was demanded by Alexander, but the demand was not pressed to compliance. Alexander crossed the Hellespont, and commenced his career of Asiatic conquest in 334 B. C. His wonderful successes gave heart to the Macedonian party in the Greek states, and maintained an ill-omened tranquillity at Athens. The most important events were the trial of Ctesiphon, on a charge, by *Æschines*, of violating the constitution, and the arrival of Harpalus at Athens, a few years later, from Asia, with an immense treasure, of which he had robbed Alexander.

The former transaction had its origin in political hostilities between Demosthenes and *Æschines*, as leaders of opposite parties. The proceeding was instituted soon after the battle of Chæronea, the calamitous result of which was charged upon the policy of Demosthenes. Notwithstanding this apparent disadvantage, the people retained unshaken their confidence in Demosthenes, as they showed by appointing him to important public offices, and by choosing him to deliver the funeral eulogy over those who had fallen on that disastrous field. But his enemies annoyed him by every form of legal persecution that the laws of Athens allowed. To put an end to these annoyances, Ctesiphon, a political friend, proposed that a crown be conferred by the people of Athens on Demosthenes, for his past and present services to the commonwealth, and for his general merits as a good and loyal citizen. This was one of the modes of recognizing eminent public services. The proposition passed the preliminary stage, and was sanctioned by the senate, but before it could be carried into execution, it was necessary to receive the vote of the ecclesia. In the mean time, it could be arrested by any citizen who should see fit to interpose, by the process called *γραφη παρανομων*, or indictment for illegal propositions, against the mover of the measure, on the ground that the facts on which the measure was recommended did not exist. Until this question was judicially decided, the original proposition for bestowing the crown was suspended. Ctesiphon was the nominal object of the prosecution, but the real motive was to ruin Demosthenes, by a sweeping assault upon his public and private character. The actual trial, for reasons which it is not now possible fully to explain, was not held for several years. The exact time when it took place is uncertain, but the probability is that about 8 years were allowed to pass before the final battle was fought. If this opinion is correct, the trial was held in 330 B. C. At this moment, Alexander was in the full flush of his eastern conquests, and this may have been the reason for selecting that time to bring the question to a judicial decision. The partisans of the Macedonian interest were, of course, in full confidence in the strength of their position, and no more favorable time could be anticipated for the overthrow of their enemies. Mean time the rumor of the proceeding had gone abroad all over the Hellenic world. The greatness of the interests at stake, and the overbearing importance of the political questions involved, the fame of the rival orators, and the wonderful attractions of every description which the city of Athens held out to visitors, drew a larger crowd thither than had ever assembled on any similar occasion. The mimic interests of the tragic stage filled the city every spring with the lovers of letters and art, at the Dionysiac festival, but here was a deeper and more moving tragedy than those of the line of Atreus or Pelops; here was a profounder interest than the woes of *Œdipus*,

or the heroism of Antigone; here was the living interest of great principles, the fates of living and illustrious men; the stirring appeals of the most marvellous powers of oratory, inspired by personal passions, by hopes and fears, by love of country and dread of slavery, by reverence for the past and the prospect of glory in the future. No wonder every man of Hellenic culture, every man with a drop of Hellenic blood in his veins, should be eager to witness such a scene. *Æschines* brought to the contest distinguished ability, a powerful voice, well-trained action, great legal acuteness, wonderful skill in the enforcing of special points, a perfect mastery of all the topics of personal attack, resentment from past conflicts, and the sense that his position and influence as a public man hung upon the chances of success. *Demosthenes* brought the inspiring consciousness of a life consecrated, with no divided purpose, to the highest good of his country. He felt that, as far as he was concerned, she had never lost her honor; that no opportunity had been omitted by him, to remind his countrymen of their duties to the memory of their ancestors, and to themselves; that he had never counselled a mean action, an action that was not in accordance with the loftiest principles of public and private honor. He felt that his long political life would bear a review, and come out unharmed from the fiercest hostile attack; and he felt full confidence in the noble sentiments of his countrymen, whom he had not flattered in his public addresses, but had often sternly rebuked. He knew they understood him, and appreciated his courage, his integrity, his disinterestedness, the austerity of his morals, his lofty standard of public conduct, for individuals and for states. He did not hesitate, he did not doubt his success, in the midst of the disheartening political circumstances of the time. He did not misjudge his own position, he did not mistake the character of his countrymen. The court was crowded, all the neighboring spaces were crowded with a densely packed and eager multitude. The orators were thoroughly prepared. They both acquitted themselves as they had never done before; but brilliant as was the oration of *Æschines*, his great rival rose to an immeasurable height above him. The clearness of his narrative, the force of his invective, the nerve of his language, the irresistible conclusiveness of his argument, the splendor of his occasional illustrations, the sublimity of his sudden apostrophe to the heroes of Marathon, and Salamis, and Plataea, who lay buried under monuments raised by a grateful country, the lofty ethical sentiments breathing through his animated sentences, produced their natural effect upon the minds of the dicasts, and *Æschines* did not receive votes enough to save him from the penalty denounced by the laws against the malicious accuser. This result was no less honorable to the people than to *Demosthenes*, and this scene clothed the day with an eternal interest for the statesman, the

scholar, the moralist. It is, for all time, one of the most conspicuous glories of the city of Athens. We have dwelt upon it at this length, because we regard it as eminently characteristic of the general tone and temper of the illustrious state in which it occurred. Harpalus arrived in Athens 5 years after this memorable trial. He employed his stolen gold among the popular leaders chiefly for his own personal security. The enemies of *Demosthenes* seized the opportunity of accusing him of accepting a bribe on this occasion. The Macedonian party was stronger than ever at this moment; and notwithstanding the contradictory statements of his accusers, the opposition which he had made to the reception of Harpalus, and the utter failure to produce a single fact in evidence against him, he was declared guilty by an over-awed court, thrown into prison, but allowed to escape with the connivance of the magistrates, who were doubtless fully convinced of the absurdity of the accusation, and took this mode of absolving themselves for allowing the technical condemnation of an innocent man. For a time he resided at Træzen and Ægina, where he passed his days in looking across the sea, to his beloved Athens. When the news of Alexander's death arrived, 323 B. C., a fresh attempt was made to overturn the Macedonian supremacy. *Demosthenes*, though in exile, joined the ambassadors, and again employed his matchless eloquence in patriotic devotion to the cause of his country's independence. The people eagerly passed a decree recalling him from exile. A public trireme was sent over to Ægina to bring him home. The whole population met him at Piræus, and escorted him in joy and triumph up to the city. So nobly did they atone for the momentary timidity of one of their courts; and this again was a scene highly characteristic of the tone and temper of the people of Athens. The contest was renewed. *Leosthenes*, the Athenian, defeated the army of Antipater the Macedonian general, at Lamia, a short distance north of the pass of Thermopylæ; but the triumph was only momentary; and the defeat of the Greek forces at Crannon in Thessaly, once more placed the Macedonians in the ascendant. The Lamian war closed with the unconditional surrender of Athens to Antipater. *Demosthenes* and the other orators, who had made themselves obnoxious to the brutal vengeance of the Macedonian soldiers of fortune, fled. They were torn from their sanctuaries. *Hyperides* was cruelly murdered at Athens. *Demosthenes*, as has already been stated, escaped a worse fate by taking poison at Calauræa, in the temple of Poseidon, dying there, in 322 B. C., at the age of 60. The leaders of the opposite party, the most honorable of whom was the austere and incorruptible Phocion, were treated with equal cruelty. From this time, Athens became the victim of the contending chiefs of Macedonia. *Demetrius*, the Phalerean, ruled Athens 10 years, supported by a Macedonian garrison, but in 306 B. C. *Demetrius*, the son of Antigo-

nus, surnamed Poliorcetes, the besieger of cities, was sent from Ephesus by his father, and compelled his namesake, the Phalerean, to surrender the city. The conqueror announced to the people the restoration of their ancient constitution, and was the object of extraordinary honors and the most degrading flatteries, on the part of the mob, who were now like sheep without a shepherd, all their great men having disappeared or perished. Athens continued under the Macedonian influence, down to the conquest of Greece by the Romans, though nominally governed by her own laws, under the administration of her own magistrates, and preserving her ancient customs, rites, festivals, and ceremonies of every description. In 200 B. C., the last Philip of Macedonia was involved in a war with Rome, in consequence of his having furnished aid to the Carthaginians. Athens suffered from his barbarism, she having taken sides with the Romans in order to throw off his oppression. The city was relieved by a Roman fleet; but before Philip withdrew from the siege, he laid waste the gardens and suburbs, including the lyceum, and the tombs of the Attic heroes, and destroyed the temples that stood on the Attic plain. Philip was defeated at the battle of Cynocephala, in 197 B. C., and in the following year Greece was declared free by the Roman consul Flaminius, at the Isthmian games. But war was again renewed by Persens, and the Macedonian empire was finally overthrown by Lucius Æmilius Paulus, in 167 B. C. In 147 B. C., war broke out between the Achæan league and Rome, but it was closed in the following year with the capture and sack of Corinth, by the consul Mummius, and the year 146 B. C. saw the whole of Greece reduced to a Roman province, under the name of Achaia. Under the Romans, Athens was prosperous and respected. She became the teacher and conqueror of her conquerors. Her schools of eloquence and philosophy were open to the civilized world. The sons of princes and of distinguished Roman citizens were sent there to complete their education under the ablest masters. Her splendid temples remained uninjured; the magnificence of the city had been increased by the liberality of foreign potentates. Ptolemy Philadelphus, in 275 B. C., had built a gymnasium near the temple of Theseus. Attalus, king of Pergamus, in 240 B. C., had embellished the Acropolis with groups of statuary. In 174 B. C., Antiochus Epiphanes renewed the work upon the great temple of Olympian Zeus; and numerous other foreign contributions, beside the single productions of native artists, in every department of art—in painting, statuary, especially the portraits and statues of illustrious citizens—were added to the treasures of the city. Athens occasionally suffered during the civil wars. She took part with Mithridates, and was besieged and captured by Sylla, who destroyed the Long Walls, and the fortifications, annihilated the commerce of Piræus, and left the city so crippled in all her resources,

that she never recovered from the blow. When the orators sought an interview with the ferocious general and reminded him of their past renown, and the glories of Marathon, he gruffly answered, "I was sent here to punish rebels, not to study history." His soldiers plundered the city and slew the citizens, until the tide of blood flowed into the Ceramicus. The groves of the academy and the lyceum were cut down, and columns were carried off from the temple of Olympian Zeus, to adorn some public building at Rome. But these public calamities still left Athens the distinction of being the intellectual capital of the civilized world. She was still crowded with works of art, and her schools were still the resort of the highest class of Roman youth, and of the men of the largest culture everywhere. Atticus, the friend of Cicero and of Pompey, resided there many years, in the enjoyment of a refined ease and literary leisure. Cicero sent his son to complete his studies, where he had himself received instruction from the ablest teachers of philosophy and eloquence. Of the precious letters of the great Roman orator, his correspondence with Atticus, while in Athens, and with his own son, while engaged in his studies, is among the most interesting and entertaining. Cicero repeatedly visited the city. Once, on arriving at the gates, before entering he turned off, and pursuing the road through the olive grove, north of the city, paid his homage to the academy, which the eloquence of Plato and a long line of eminent successors had made immortal. It was from Athens that Sulpicius addressed the letter of consolation to Cicero on the death of his beloved and accomplished daughter. Horace and Virgil studied in Athens, and nurtured their genius with her abundant and still living literature. The establishment of the empire made but little difference in the condition of Athens. She still continued the school for the education of the high-born youth of Rome, and her literature furnished the models, both in poetry and prose, for the imitation of the Augustan literature of the imperial city. Her artists were employed to build the temples and chisel the statues, which made the Augustan magnificence of Rome. Her language was studied and spoken by the highest society; and in the Roman schools Greek was taught at the same time with the mother tongue. The transcendent event in the reign of Augustus, was the birth of Christ in Judæa, and the planting of the Christian religion. One of the most remarkable transactions in connection with this event was the appearance of St. Paul at Athens, and the great discourse delivered by him from "the midst of Mars Hill" to the assembled philosophers and citizens there. This great teacher of the Christian faith was familiar with letters and philosophy by his early education at Tarsus, which almost rivalled Athens, as a centre of Greek learning and eloquence. He visited Athens probably about the middle of the 1st century of our era. Walking in the agora like any other

stranger, he met with some of the philosophers and men of letters who daily haunted that busy centre of Athenian life. According to the custom of the place and the men, they fell into a discussion, in which the apostle, in his earnest and impressive manner, advanced the new doctrines, which it was the business of his life to diffuse. They were chiefly Stoics and Epicureans whom he encountered, because the stoa, the resort of the former, was in the agora; and the gardens of Epicurus, the haunt of the latter, were not far off on the bank of the Ilissus. The academy was distant a mile and a half north of the city, and the lyceum was at a considerable distance east, so that the Academics and Peripatetics, with whose doctrines he would most have sympathized, were not, at least in any considerable numbers, present at the conversation. Yet the cultivated persons whom the apostle met were evidently much impressed by the novelty of St. Paul's doctrines, and the solemn earnestness of the man. They courteously invited him to ascend the Areopagus, where he might speak more at length, and where they, sitting at ease and beyond the noise and bustle of the agora, might more conveniently hear him. The Areopagus was the most sacred and venerable spot in the city. The legendary associations of the heroic age, and of the most ancient religion, clustered around it. Here was the seat of the oldest and most venerable court, the members of which were citizens who had blamelessly discharged the highest functions of the state. At its south-eastern angle was a dark and solemn cavern, near which stood a revered temple of the Eumenides, on the spot where Oedipus was mysteriously taken from sight, after a life of unequalled woe, foredoomed by fate. It was up this sacred height that the great apostle was taken by the Athenian scholars and sages, and on that revered summit, surrounded by the magnificence of Athens, and under the soft blue sky, which looked down upon the scene with its smiling serenity, that he delivered that memorable discourse, in which he showed the generous courtesy of the gentleman, the highest gifts of the orator, and the unshaken fidelity of the servant of Christ. We can form some judgment of its grand and impressive character from the masterly sketch in the 17th chapter of the Acts, and from the fact there recorded, that among the immediate converts to the fervid and bold eloquence and irresistible logic of the Christian orator, was one of the foremost citizens of Athens, Dionysius the Areopagite. The discourse made its mark outside the religious circles. The candid and accomplished Longinus, born in the 8d century at Athens, a follower and teacher of the Platonic philosophy—so learned that he was called a living library and a walking museum—a man also experienced in affairs—having been the confidential adviser and friend of Zenobia the queen of Palmyra—a writer whose elegant work on "Sublimity" is still one of the best manuals of criticism—a scholar, familiar not only with Pagan, but with

Jewish, and probably with whatever Christian literature existed in his day,—and perhaps personally acquainted with the principal Christian teachers who were his contemporaries,—uses this remarkable language, in a fragment of one of his critical treatises: "The crowning flower of Hellenic genius and eloquence is to be found in Demosthenes, Lysias, Aeschines, Aristides, Timarchus, Isocrates, Xenophon—to these I would add Paul of Tarsus, one of the first founders of an unproved doctrine." Longinus was not a Christian, as the last words of this extract show; but he was a man of a gentle temper, and a comprehensive spirit. His language shows that the discourse of St. Paul had become one of the great traditions of Athenian eloquence, and that Longinus regarded him as worthy to stand on a level with the great masters of the Bema. The scene of St. Paul preaching on the Areopagus was also characteristic of the tone and temper of the citizens of Athens. The Emperor Hadrian, in the first part of the 2d century, was a devoted lover of Greek art and literature. Athens was the special object of his beneficence. He finished the temple of Olympian Zeus; established a public library; built a pantheon and gymnasium. The arch which he constructed is still standing near the north-east angle of the Olympieum, and the inscription which claims the south-eastern quarter of the city as the city of Adrian is still legible, as well as that on the side toward the Acropolis, which recognizes all that part as "Athens, the city of Theseus." In the same century Herodes, a native of Marathon, and surnamed Atticus, a man of learning, eloquence, and vast wealth, and educated by the best masters of Athens, distinguished himself, not only as a teacher of the Roman youth—numbering among his pupils Marcus Aurelius himself—but by the costly additions he made to the splendors of the city of his choice. He lined the enormous stadium of Lyourgus, in the south-east quarter of the city, with marble seats for the whole population of Athens. He built at the south-west angle of the Acropolis the theatre which bears the name of his wife Regilla. He left many literary works, but time has swept them all away, while sparing the monument which has saved the name of his wife from oblivion. The emperor Marcus Aurelius increased the number of the Athenian schools and the salaries of the teachers. When Pausanias visited Athens in this period—about the middle of the 2d century—the city must, externally, have presented its most magnificent appearance. It is to his careful, minute, though somewhat dry details, that we are indebted for most of our knowledge of what ancient Athens was. He saw the city when its public buildings were untouched by time, and had not as yet fallen under the hand of the spoiler. The works of the great artists which occupied the Acropolis, the agora, the temples, and the streets, were still standing. The statue of Athena Promachos still seemed to guard the citadel; Harmodius and Aristogiton

still stood on the western ascent to the Acropolis. The eponymic heroes still adorned the agora, and the bronze statue of Demosthenes still reminded the stranger and the citizen of the great days of Athenian patriotism and eloquence. Hegesias, the historian, a little later, gave up the enumeration of the wonders of Athens with the exclamation: "All cannot even be mentioned, the Athens was built by the gods, and by ancestral heroes;" and Aristides, the rhetorician, in the time of the Antonines, said: "The greatness of the city and its splendor correspond with its fortune in other respects, and with the great name of the inhabitants. Art here vies with nature. A pure and mild sky encompasses the land. . . . Of art it is difficult to select the best. Here are the largest and most beautiful temples; here are the noblest statues, both old and new. Were we to cast aside its ancient renown, its trophies by land and by sea, its orators and heroes, and all the achievements with which it has filled up the long period of its existence, still the objects we see before us now will give it the foremost rank among all the cities in the world." So the city remained for many years. About the middle of the 8d century the Goths, crossing the Hellespont and Ægean, descended upon Attica. Athens made a brave defence under the inspiration of the scholar and philosopher Dexippus. He addressed the citizens in an eloquent harangue, a part of which has been preserved. "I am resolved," said the brave philosopher, "to share your fate in fighting boldly for all we most prize on earth; and be assured that, through me, the glory of Athens shall never be sullied. It becomes us to remember the deeds of our fathers; to show ourselves as an example of bravery and freedom to the other Greeks, and to secure to ourselves in the present and future generations the imperishable renown of having proved by our actions, that the courage of the Athenians remains unbroken, even in adversity. We march to battle to defend our children and all we hold most dear. May the gods be our support." Athens suffered somewhat at the hands of the barbarians, but they were driven at length tumultuously out of Attica. It is related by Zonaras that one of the Gothic chiefs, finding a party of his soldiers on the point of burning the libraries of Athens, having collected the books in a pile, told them to leave those things to the effeminate Greeks, for the hand accustomed to the smoothness of the papyrus would feebly grasp the brand of the warrior. In A. D. 258, a few years before the arrival of the Goths, the walls, which had been in a ruinous condition since the siege of Sylla, were repaired by Valerian. In A. D. 396, Alaric came down, like a storm, from the North, ravaging fields and plundering towns on the way. He advanced upon Athens, eager to capture the city and rob the temples. But he was disappointed. Either the fortifications were too strong or he was too impetuous to submit to the slow pro-

gress of a siege. At all events, instead of assaulting the city, he accepted the hospitalities of the magistrates, and retired loaded with gifts, leaving Athens and Attica unharmed. A tradition is recorded by Zosimus, a writer of the 5th century, that as Alaric advanced with his barbarian host, he beheld Athena Promachos marching along the walls of the Acropolis, completely armed, as she was represented in the statue of Phidias, and by her side the hero Achilles, such as Homer describes him when burning to avenge the death of Patroclus. Alaric, frightened by the sight, abstained from assaulting the city, and sent in heralds with propositions of peace. This curious story may be so far founded in fact, that to the superstitious mind of the ignorant barbarian, the armed and lofty figure of the goddess appeared like the goddess herself guarding her own citadel. It shows at least that the statue was standing in the 5th century. We have seen that Christianity was preached in Athens by St. Paul, and that converts were gained among the highest classes. We have few details, but it seems probable that the new religion found adherents among thinking men there, from that time forward. The rites of the ancient religion were, however, publicly celebrated for a considerable time after Christianity had ascended the throne in the person of Constantine the Great. The schools of philosophy continued down to the reign of Justinian, in the 6th century. Athenian learning and Athenian taste were still celebrated all over the world, and Athens continued to be the resort of students of every rank and condition, both pagan and Christian. The early years of the emperor Julian were studiously passed in Athens. In his letter to the Athenians on quitting their city, he exclaims: "What fountains of tears did I shed, what lamentations did I utter, stretching my hands up toward the Acropolis, when I invoked and supplicated Athena to save and not to abandon her servant." Gregory of Nazianzus, the great Christian orator, was one of the fellow-students and friends of Julian, though afterward, when the latter apostatized from Christianity, he became a bitter and very able opponent. But Gregory and Basil, as well as Julian, delighted in their residence at Athens. They, with other young men of congenial tastes, formed a society, which was bound together by the common ties of literary pursuits, Christian faith, and devotion to a Christian life. "The day of our departure," says the former, "and all the circumstances of our departure, arrived—the farewell words, the attendance to our ships, the last messages, the lamentations, embraces, tears. Nothing is so painful as for friends to be severed from Athens, and from each other. Our companions, and some of the professors, surrounded us and entreated that we would desist from our purpose. With Basil it was ineffectual, and he departed; while I, who felt myself torn asunder by the separation, speedily followed him." The passion of

Gregory for Athens was so strong that he delighted in being called Philathenæus. In the 5th century Athens was deprived of some of her treasures of art. Many pictures were taken by the proconsul from the Stoa Poikile—among the rest the paintings of Polygnotus, representing the capture of Troy, and the battle of Marathon. The great statue of Athena Promachos probably disappeared in this century. Synesius, in one of his epistles, speaking of his intended journey to Athens, makes a sarcastical allusion to these transactions. The letter is curious also as exhibiting the regard in which Athenian culture was still held. "I shall not only," writes he, "derive this benefit from my journey to Athens, to be freed from my present troubles, but I shall no longer be compelled to worship for their learning, those who come from thence, and who are in no respect superior to us common mortals; certainly not, in comprehending Aristotle and Plato. They move about among us like demigods among mules, because they have seen the academy, the lyceum, the painted stoa, in which Zeno philosophized—now the painted stoa no longer; for the proconsul took away their panels, and put an end to their philosophic pride." Other passages in his letters show in what esteem the arts and handicrafts of Athens were held in other cities, especially Alexandria. In this same century, the beautiful Athenais, daughter of the Athenian philosopher Leontius, became a Christian, was baptized at Constantinople under the name of Eudocia, married the emperor Theodosius II., and did much by the influence of her example, and by building churches, to promote Christianity in Athens, the local government having recently authorized, by direction of an imperial rescript, the public recognition of Christianity there. It appears that orders were given from Constantinople to destroy the pagan temples. Gregory declared against the injurious influence of the idols, which, according to him, more abounded there than elsewhere in Greece. The edicts of the emperors were not carried into execution, and many of the temples were saved by being converted into Christian churches. The temple of Olympian Zeus was consecrated to Christ the Savior, the Parthenon to the Holy Wisdom (St. Sophia), afterward changing the designation to the Panagia, and the Mother of God, the temple of Theseus to St. George of Cappadocia. Justinian, in the early part of the 6th century, withdrew the salaries from the public teachers in Athens, and prohibited instruction in philosophy, partly because the schools were antagonistic to Christianity, and partly to devote the money thus saved to the embellishment of the capital, and the building of the church of St. Sophia. From this time forward Athens sank into the position of an obscure provincial town, and her name is seldom mentioned by the historians occupied with the affairs of the eastern empire. We scarcely hear of the city for nearly 4 centuries. The

inhabitants doubtless led a peaceful life; the more ambitious spirits seeking their fortunes at the imperial court of Constantinople. Heathenism entirely died out; Christianity, under the complicated forms and liturgies of the eastern church, took its place. The city was furnished with numerous small churches, built in the peculiar style of architecture called Byzantine, and probably some of the materials employed were taken from the ancient structures. In the 12th century we hear of Athens being taken and plundered by Roger, king of Sicily, whose devastations of other parts of Greece struck a severe blow to the prosperity which appears to have been silently advancing for 3 centuries. The 4th crusade again brought the name of Athens to the notice of Europe. Greece was parcelled out among the Frankish princes after the capture of Constantinople in 1204. Otto de la Roche was made duke of Athens in 1205, and 4 successors of his family held the dukedom until 1308. Walter de Brienne succeeded. He was overthrown by the Grand Catalan company, whose aid he had invoked. A duke of the Sicilian branch of the house of Aragon was invested with the dignity by the Catalans, and in this line the dukedom remained until 1386. Six dukes of the Florentine family of Acciajuoli ruled Athens from A. D. 1386 to A. D. 1456. The ducal court of Athens was one of the most brilliant in Europe. The title of duke of Athens became familiar in the poetry and romantic literature of the West. Dante, a contemporary of Guy II. and Walter de Brienne, calls Theseus *il duca d'Atene*. Chaucer calls him, also, the duke of Athens. And finally, in the age of Queen Elizabeth, Shakespeare introduced the title in the "Midsummer Night's Dream," where Theseus, the conqueror and lover of Hippolyta, figures again as duke of Athens. Muntaner, the quaint old Spanish chronicler, declares that the Frank chivalry of Greece was second to none in Europe, and that the French language was spoken as well at Athens as at Paris. The Parthenon was consecrated to the Blessed Virgin, and the service of the Roman church was celebrated in Latin within its walls. The ducal palace was built near the Propylæa, where the revels and gayeties of the court drew together the most gallant knights of Europe, and the honor of knighthood was once conferred in the temple of Athena. Tilts and tournaments were held on the Attic plain, and the feudal system was partially imposed upon the people. But they were a ruling caste, living among a conquered nation, with whom they had no sympathies—of another language, and a hostile creed. When the storm of Turkish conquest swept over the land, they fell before it, and disappeared. But few memorials now remain of this chivalrous interlude in the history of Athens. On the Acropolis, an arched subterranean chamber, and an old tower on the right of the entrance; and in the crumbling monastery of Daphne, which occupies the site of an ancient temple of Apollo, two stones

coffins thrown carelessly into a dark room filled with rubbish, and known by the half obliterated fleur-de-lis carved on them, alone remind us, on the spot, of the dukes of Athens. In 1456, the year in which it was captured by Mohammed II, Athens appears to have been in a tolerably prosperous condition. The number of its inhabitants is said to have exceeded 50,000. The city was treated with unaccustomed mildness by the conqueror. He visited it in person, gazed with admiration upon its still existing wonders, granted important privileges to its inhabitants, placed its government in the hands of a high officer of his household, which secured it from the exactions and oppressions to which other conquered cities and states were subjected by the agas and pashas who were appointed to govern them. Having placed a garrison in the Acropolis, and exhibited many tokens of his good will, he took leave of the Athenians, and marched into Peloponnesus. In A. D. 1459, the sultan returned to Athens, and established himself in the quarter now called *Patissia*. It was at this time that the Parthenon was converted into a mosque, and the Moslem services were performed. In 1467, the Venetians went to war with the Turks, and invading Greece with a powerful fleet, landed at Piræus, and expelled the Turks from Athens, after a bloody battle. Athens remained under the Venetians until 1470, when the sultan entered Greece with a large army, and retook Athens. He made some changes in the administration of the local government, which he had hitherto left in the hands of native magistrates, only requiring the payment of an annual tribute to the Porte. He now resolved to place Athens under a waywode, who, however, held his office from the chief eunuch of the harem. The external affairs of the city were managed by the waywode; a *cadi*, or judge, decided the controversies between the Ottomans, without interfering in those of the Christians. The garrison on the Acropolis was under the command of the Turkish *Disdar*. The proper municipal affairs of the city were managed by magistrates elected from the principal families, by the people, and called by the ancient name of archons. They administered nearly all affairs, civil and ecclesiastical, judicial and spiritual, and their decisions were accepted by the people without a murmur. In disputes between Turks and Christians, the archons interposed in the first instance as peacemakers; but if they failed to bring about an adjustment, an appeal lay to the *cadi*, and from him to the grand vizier. This form of administration remained unchanged from 1470 to 1687. With regard to the condition of Athens during these two centuries, we have but few and brief notices; but it appears to have been not unhappy. In 1570, Zügomalas, a native of Nauplia, in a letter to Martin Kraus (Orusys), a German professor at Tübingen, and author of a work entitled *Turco-Græcia*, says that he has often visited Athens and examined its curiosities; describes the salubrity of the air, and the

excellence of the water; and praises the Athenians as quick-witted, sweet-voiced, and as excelling in music. In another letter, written in 1581, he describes the olive groves watered by the Cephissus and the Ilissus, and yielding a large revenue, by the sale of oil at Constantinople and other cities, to the cultivators. From a letter of Cabasilas, another Greek, it appears that the Acropolis was occupied by Turks, and that the city was chiefly inhabited by Christians, the number of whom amounted to nearly 40,000, many families having left the city at the time of its second capture by the sultan. In A. D. 1675, Athens was visited by Wheeler and Spohn, the former an Englishman and the latter a Frenchman. Both published accounts of their travels, and both represent the condition of the city, and the intelligent character of the inhabitants, on the whole in a favorable light. In A. D. 1687, Morosini, the Venetian admiral, having gained brilliant victories in the war between the republic and Turkey, suddenly appeared in the Piræus. The Athenians seized the opportunity to send a deputation of their chief citizens giving him to understand that they earnestly desired to free themselves from the Turks. The admiral immediately invested the Acropolis, planting his batteries on the Museum, the Pnyx, the Areopagus, and on the eastern side of the Acropolis. The Turks had fortified themselves as well as the suddenness of the attack and their limited means would permit. They had demolished the exquisite little temple of the Wingless Victory, and used the marble blocks in the construction of a bastion below the Propylæa, where they remained undiscovered until 1686. They had deposited a quantity of powder and other munitions of war in the Parthenon. This was made known to the besiegers by a deserter, and an able engineer succeeded, on the night of Sept. 26, in throwing a bomb directly into the magazine, and a formidable explosion immediately followed, causing more damage to that incomparable structure, than time and barbarian ravages had accomplished for 20 centuries. The Turks surrendered on Oct. 4, and were allowed 5 days for their departure with their wives and children. Three thousand went away; but according to Sir Paul Rycault, 800 Turks chose to abjure Moslemism rather than quit Athens, and being baptized, were received into the Catholic Church. Morosini and his officers, together with the Athenians, commemorated the liberation of Athens by religious services, and consecrated the most beautiful church in the city to St. Dionysius the Areopagite, the surrender having taken place on that saint's day. But an epidemic sickness, and a fresh muster of the Turks, compelled Morosini, in a few months, to withdraw from Athens. A large number of the citizens fled with such of their valuables as they could carry with them; some to Salamis, Ægina, and other islands; some to Corinth, some to Nauplia, and others to Cephalonia, where a village now bears the name

of Athenia, still inhabited by their descendants. These events occurred in March, 1688. The city remained deserted until the following year, when the Turks entered it and committed a large part of the houses to the flames. The Athenians, however, began gradually to return. The sultan granted them a free pardon, and remitted the tribute for 8 years. Their condition was eloquently and pathetically described in an address written from Salamis to the patriarch of Constantinople, in 1690. Hardly had the Athenians returned to their native city, when they began to give their attention to education. Gregorius Soteris, afterward metropolitan of Monembasia, established at his own expense a Hellenic school. Johannes Lekas established another, in which he supported 12 pupils at his own expense, having deposited in the treasury of the Venetian republic the requisite funds, which were lost by the downfall of that government, in 1797. Both schools were afterward supported at the public expense, until 1812. From 1690 to 1754, the Athenians lived quietly, under a political organization essentially the same as we have already described. In a memoir written by a distinguished teacher, Johannes Benizelos, and published by Christophoros Perrhaebos, in his history of Souli, it is said, of this period: "Athens, although under the Ottoman yoke, was in a flourishing condition, and might be held up as an example to the other cities of Greece. It was her good fortune to have her affairs wisely administered by honorable citizens, under a kind of aristocracy, bearing the ancient title of archons." He then gives in detail, the mode in which the government was carried on; their relations with the waywode and the sultan; the rates of taxation, and other interesting particulars. Between 1754 and 1777, Athens was frequently harassed by the Albanian incursions. In the latter year, a battle was fought at Calandria, near Athens, by the Athenian Turks and Greeks, under the waywode, named Chaseskes, against these barbarians, commanded by the Deli Pasha, and a decisive victory gained. This event put a stop, for the time, to hostile incursions. In 1778 Chaseskes fortified Athens with a wall, using materials taken from many of the ancient structures. The conduct of Chaseskes gained him so much popularity, that his reappointment was solicited and obtained of the Porte, and finally he was appointed waywode for life. Having secured his end, he threw off the mask, and showed himself to be a grasping and tyrannical man. The tide of popular feeling turned against him, he was banished; but by intrigue and bribery he was again restored. The contest continued 23 years, during which the game was repeated 5 times; and finally, in 1795, he was beheaded in Cos, the place of his exile. In this period the prosperity of Athens declined. Her population and wealth greatly diminished. A pestilence ravaged the city in 1789 and again in 1792. About 1,200 perished in the former, and 1,000 in the latter.—We have

now arrived at the period, when the movements for national regeneration commenced among the Greeks. Toward the end of the last century and the beginning of the present, a remarkable revival took place in the intellectual energies of the Greeks. Members of Fanariot families at Constantinople, wealthy merchants in the principal cities of Europe—the Rhalles and Zosimades—helped by their liberal contributions the growing ardor of the Hellenic race, for reform and education. Literature lent its aid to the kindling enthusiasm. The lyric songs of Rhegas, the Thessalian, thrilled the heart of the nation; and the elegant and animated appeals of Coraës to the glorious memories of the past history, and to the noblest sentiment of patriotism, nerved his countrymen to dare every extremity of fortune to regain their long-lost independence. Athens shared in the general excitement. The society called the *Heteria*, embraced the leading Greeks wherever found. New schools were established at Athens, at the expense of patriotic citizens, and young men were sent to the universities of western Europe. Among the distinguished Athenians belonging to this period, may be enumerated Benizelos, the distinguished teacher, whose memoir on Athens has been already referred to, and who died in 1806; Koubelanos, teacher, d. 1812; Marmarotoures, teacher, d. 1817; Logothetes, magistrate, d. 1818; Triantophylles, ecclesiastic, d. 1821 (beheaded by the Turks); Rebelakes, d. 1821; Philippides, d. 1821; Katzandrea, d. 1821; Kapetanakes, magistrate, d. 1822; Ohomatianos, English consul, d. 1822; Danes, bishop of Edessa, d. 1822; Masson, d. 1823; Skouzes, d. 1823; Petrakes, teacher, d. 1823; Kodrikas, d. at Paris, 1827; Zographos, d. 1828; Angelides, d. 1829; Staoros, Marmarotoures, d. 1832; Galanos, d. in India, 1833. Many distinguished men of Athens who took part in the national movements, are still alive, and in various departments of the public service. The war of independence commenced in 1821. The fortunes of Athens were variously affected during the 7 years of its continuance. The insurrection having commenced elsewhere, reached Attica in a few weeks. The Turks retreated to the Acropolis, the city was taken possession of, the standard of liberty was raised April 28, 1821, and the garrison was closely besieged. Several tragical scenes were enacted in the following months. The garrison was relieved July 20, and the Greek troops compelled to retreat, by the Turks, under Omer Pasha, Briones, and Omer Bey. Many of the inhabitants were slain, and the city ravaged, plundered, and burned. Many of the Athenians fled to Salamis and Ægina, and some of them joined the troops concentrating at the isthmus of Corinth. In Sept. 1821, Omer Pasha retired from Athens with the greater part of his forces, and his Deli Pasha, soon afterward, with the remainder. The Acropolis was again left in the hands of the resident Turks, and the Athenians, returning from their places of refuge, besieged them. The Turks had collected large

supplies of provisions. A good deal of hard fighting took place between the besiegers and the besieged. The Turks having undergone the most terrible sufferings, chiefly from want of water, finally surrendered, and the Greeks planted their standard on the Acropolis, June 10, 1822. The number of Turks who capitulated was 1,160. Before they could be conveyed to a place of safety, unfortunately for the good name of the Greeks, a rumor of a new invasion spread through the city, and caused such alarm that they fell upon the Turks, and put to death about 400, in violation of the terms of the surrender. Some perished by an epidemic disease, and finally only 550 were transported safely to Asia Minor. Meantime dissensions broke out among the leaders at Athens, and Ypselantes, Niketas, and Odysseus, called in by the contending parties, arrived at Athens in August. As they were of one mind upon the matter, Odysseus was allowed to dispose of the command of the garrison to his subordinate Gouras, he himself having been made military dictator of eastern Greece. On Feb. 16, 1823, the city of Athens was enlivened by the festivities in honor of the marriage of Gouras with the daughter of a distinguished family of Lidoriki. A popular movement against his government was put down by rigid and severe measures, and a sudden rumor that the Turks were on the march for Athens tended to allay the discontents by a sense of the common danger. Gouras collected in the Acropolis all the provisions he could lay hands on; but the Turks, having killed a few peasants in the neighborhood, taken prisoners a number of women, and gathered the ripening grapes in the vineyards, withdrew from Attica. In 1824 Odysseus entered into traitorous compact with the enemy, and commenced a series of hostile demonstrations against Athens. Gouras, commandant of Athens, was sent against him, and gained a victory. Odysseus, perhaps already repenting the rash step he had taken, and not willing to trust to the fidelity of the Turks, surrendered himself to Gouras. He was sent to Athens and placed in close confinement in the old tower on the right of the Propylæa. On June 18 his mutilated and lifeless body was found below, he having doubtless been put to death with the consent of Gouras himself. Karaiskakes, who had been for some time engaged in brilliant military operations in the north, returned to Athens, early in March, 1827. In the mean time Lord Cochrane had arrived, and Gen. Church had been appointed generalissimo of the Hellenic armies. Early in 1826 the Turkish forces, under Kiutahi Pasha and Omer Pasha, overran Attica. Gouras was appointed commander-in-chief of eastern Greece, and was ordered to advance upon the enemy and not to await their arrival at the gates of Athens. He paid no attention to the orders of government, and by numerous acts of oppression alienated the rural population in the neighborhood; but, though disapproving the acts of their commander, the Greeks in the city remained faithful. Numerous conflicts

occurred in the neighborhood of Athens. On Aug. 8 the Turks forced their way into the city, and the Greeks retired into the Acropolis. As Gouras was now besieged, the government appointed Karaiskakes to his place as commander of eastern Greece. One evening in October, as Gouras was watching the operations of the enemy in one of the outworks, making the rounds, he was struck by a shot from the Turks, and fell instantly dead. His body was brought insilently, and in the morning was buried in front of the Parthenon, after the funeral rites of the Greek church. His wife showed herself, on this occasion, worthy to be the companion of a hero. "Why do you weep?" said she, to the soldiers, as she saw them shedding tears. "You have caused his death by your attempts to desert. If your consciences reproach you as the authors of my widowhood, change your conduct, and do not slay his wife also by desertion." The soldiers, overcome by her words, took an oath upon the Gospel and the picture of Christ to maintain their fidelity to the wife of their commander, and they kept the oath. Shortly afterward all his family perished, with a considerable number of Athenian women, beneath the ruins of a part of the Erechtheum, battered down by the besiegers' artillery. The garrison was reduced to great distress, and several daring attempts were made to relieve them. This is not the place to narrate the thrilling events of the fierce struggles in the plain of Athens. On May 4, Karaiskakes rose from a sick bed, as he heard the firing in a skirmish, sprang upon his horse, and galloped into the midst of the fray. He was borne mortally wounded from the field. He passed the last hours of his life in conversing with the assembled chiefs on the condition of the country. Just before he drew his last breath he said to those around him, among whom were Lord Cochrane and Gen. Church: "My country laid upon me a heavy task. I have fulfilled my duty by 10 months of terrible battles. Nothing remained but my life. This I owed to my country; this I surrender to my country. I am dying; let my fellow-soldiers finish my work; let them save my Athens." On May 6 a bloody and decisive battle was fought. Lord Cochrane boasted that he would dine on the Acropolis; but the boast was vain. The rout of the Greeks was complete. Cochrane and Church were compelled to seek refuge on board their ships. The posts in the neighborhood of Piræus were abandoned, and 1,500 of the flower of the Greek warriors lay upon the field; many of the bravest of the leaders fell; others were taken prisoners, and 240 of them were beheaded by the Turks the following morning. Some ineffectual attempts were afterward made to relieve the garrison. The citadel, however, was compelled to surrender on June 5. More than 2,000 men and 500 women were marched down from the Acropolis, and transported to Salamis, Ægina, and Poros. Thus, after a siege of 11 months, Athens was replaced under Turkish domination. About

8,000 Greeks and as many Turks had perished in the siege. Athens remained in the possession of the Turks long after hostilities had been ended by the intervention of the great powers, and was not restored to the Greeks until 1832. During these last years almost all the modern buildings of the city had been demolished. Scarcely a private dwelling was uninjured, and Athens was a pile of ruins. The noble remains of antiquity shared in the general calamity. The repeated bombardments of the Acropolis left their marks upon the Propylæa, the Parthenon, and the Erechtheum, and to this day the broken edges of the rich brown columns, where the original glimmer of the marble is seen, bear witness to the effects of the cannon balls which did the mischief. Human bones, and rusty balls, and fragments of bomb-shells, are found among the masses of broken marble, with which the surface of the Acropolis is strewn. The American missionaries, Dr. Hill and Dr. King, were among the earliest to plant themselves among the melancholy ruins of the city. They gathered a school of forlorn children and vigorously began to reconstruct the edifice of Christian civilization. Capo d'Istria, the President of Greece, was assassinated in 1831. On Aug. 8, 1832, Otho, the second son of the king of Bavaria, who had been selected by the great powers, England, France, and Russia, was solemnly proclaimed king at Nauplia. He arrived in February, 1833. The king, only 17 years old when he was chosen, attained his majority, which was fixed at 20, in 1835. In that year the seat of government was transferred from Nauplia to Athens, and from this date recommences the history of Athens as the centre of civilization in that quarter of the world. In 1836 Otho was married to Amelia, a princess of the house of Oldenburg, one of the most beautiful women in Europe. The king and his lovely queen arrived in the Piræus, Feb. 14, 1837. The next day they entered Athens, under triumphal arches, decorated with laurel and myrtle wreaths, by the children of the American missionary school, and amidst the enthusiastic acclamations of the people. The city was rapidly rebuilt, and the population increased. The presence of the court and the foreign embassies, quickly created the appearance of active business and renewing prosperity.—In 1843, Athens was the scene of a remarkable revolution, by which a great political change was effected, without shedding a single drop of blood. The Greeks expected to be governed by a constitutional monarchy. But the treaty which placed Otho on the throne, contained no stipulation upon this point; and it did not enter into the plans of the regency which accompanied the young king, to grant a constitution to the people. On attaining his majority, the king took no step in that direction, but governed the country through a ministry and council of state. The people were disappointed and impatient; and their impatience reached its height in 1843. Gen. Kalerges, then in charge of the troops quartered in Athens, supported also

by the great body of the citizens, surrounded the palace in the night of Sept. 14, and demanded a national assembly for the formation of a constitution. No personal disrespect was shown to the king and queen, but the demand was firmly maintained. At length the ordinances were signed, by the advice of the liberal members of the council of state, at whose head was Gen. Church. A new ministry was appointed, and a national assembly convoked. The troops returned to their barracks, the citizens to their homes; the business of the city was not interrupted for an hour, and the courts sat as if nothing had happened. Not an act of violence dishonored the proceedings. The next night the city was illuminated, and Sept. 15 was added to the national holidays. The king and queen were cheered when they drove out as usual, on the following day. The elections for the national assembly were quietly conducted, and resulted in the choice of the best men throughout the country. It consisted of 225 members. They met Nov. 20, and chose for their president Mr. Panoutsos Notaras, a member from Corinth, who was 107 years old, and 4 vice-presidents, Mavrocordatos, Metaxas, Collettes, and Londo. They immediately commenced their labors, and the constitution which they framed was formally accepted March 16, 1844. This constitution secures all the great political and personal rights of the citizens, the equality of the citizens before the law, religious freedom, freedom of the press, popular instruction at the expense of the state, the inviolability of letters, exemption from arbitrary arrest, trial by jury, the independence of the judiciary. The legislative power is distributed between the king, a house of representatives chosen by the people for 3 years, and a senate appointed by the king for life. The ministers are appointed by the king, but subject to impeachment for malfeasance in office. Many other provisions are embodied in this instrument, which cannot be enumerated in this brief sketch. The country has been governed under this constitution from the time of its adoption to the present. Athens has advanced in wealth and population slowly. The present number of inhabitants is only about 80,000; but it is in a fair way to recover some of its lost prominence among the capitals of the world. Wealthy Greeks are beginning to build handsome houses in the eastern quarter of the town. Wherever the calls of business have placed them, they regard Athens with affection, as the capital of the Hellenic race. In education it would be difficult to find another city which has done so much. It has a system of free schools, well graded and ably taught, with 2 thoroughly organized gymnasia, and an admirable university, with 42 professors and 600 students. It is organized according to the German plan, by the establishment of the faculties of philosophy, law, medicine, and divinity. Nothing can exceed the intellectual ardor of the young men, in the several departments of study.

The lecture rooms are daily crowded. The university library now contains some 90,000 well-selected volumes, although the university itself was established so recently as 1836. The press is as free as that of London or New York. The number of books issued by the publishing houses is unprecedented. The education for girls is amply provided for. Beside the private schools, and the justly celebrated establishment of Dr. Hill, the American missionary, there is an excellent institution called the Parthenagogeion (school for young women), under the general supervision of Madame Manos, a sister of Alexander Mavrocordatos, a lady of the noblest character, as well as the highest social position. It is partly supported by the society of the friends of education (*Εταιρία φιλεκαδευτική*), which was established in 1836. The queen is the special patroness of the school. Its leading object is the education of young women to be teachers; but scholars are received for general education. The regular course of study extends through 5 years, embracing history, Christian ethics, ancient and modern Greek, writing, drawing, arithmetic, vocal and instrumental music, domestic economy, and practical arts. During the last 6 months, those who intend to be teachers are instructed in the methods, and trained in the practice of teaching. A diploma is given to those who have passed satisfactorily through all the prescribed examinations. The future teachers are supported at the expense of the society and the government. In return for this, they are under the obligation to teach 4 years, within the kingdom of Greece, in any school to which the minister of instruction may appoint them. If they fail to keep this condition, they must pay at the same rate with the other scholars, sureties having been given when they enter the school. The annual examinations are attended not only by the committee of the society, but by their majesties the king and queen, the members of the cabinet, the professors of the university, the most eminent of the clergy, and other distinguished personages, before whom the chairman announces the result, and distributes the diplomas. Among the professors in the gymnasia and the university, and the teachers in the schools, there are many men and women who would do honor to the profession in any country in the world.—We have already spoken of the admirable Madame Manos. Her associates are excellent and accomplished persons. Among the women who teach in the common schools are many whose self-sacrificing zeal and conscientious devotion are contributing powerfully to the moral and intellectual improvement of the rising generation. Of the professors in the university, we speak from personal knowledge when we say that the venerable Asopios—the friend and contemporary of the German Wolf—expounds Homer with the life and fire of another Nestor. The lectures of Philippos Johannis on moral philosophy are admirable for purity of

style and clearness of method. Alexander Rizos Rangabes, now holding, in addition to his professorship, a position in the cabinet as minister of foreign affairs, discourses upon the fine arts with acuteness, learning, and taste. Manouses lectures eloquently on history, amidst the applauses of a crowded audience. Pericles Argyropoulos, lately also a member of the cabinet, as minister of religion and public instruction, is a most able and distinguished professor of the law. Professor Kontogones, who has already been mentioned in connection with the Parthenagogeion, is profoundly versed in the Hebrew and Greek Scriptures, and draws to his lecture-room numerous and attentive classes. Professor Paparrhagopoulos lectures on the history of the Hellenic race, with elegance and spirit, and is, beside, a writer of classical purity of style. Nor are these the only members of the professional body who are entitled to the admiration and gratitude of their countrymen, but we have no room to mention more. The institutes for education are objects of pride and favor to the Greeks in other countries. Large contributions are made for their support, from all quarters. Half a million of francs have been lately given by a wealthy Greek, to found an academy of arts and sciences. Very recently, another Greek, named Platygenes, a native of Thessaly, bequeathed 200,000 fr.—\$40,000—to the university, and, about the same time, a knife-grinder, who died leaving 600 drachmas—\$100—accumulated from his scanty earnings, bequeathed 100 dr. to the university. The library is constantly receiving gifts from Greeks in other countries, and is rapidly increasing, almost exclusively from these sources. The Greeks are beginning to excel in the fine arts. Hitherto, in modern times, art has not emancipated itself from the mechanical formalism of the Byzantine school, or, to speak more correctly, the school of Mt. Athos. Pictures, painted according to precise directions laid down in a recently discovered manual called *Ἑρμηνεία τῆς ζωγραφικῆς*, containing the traditional rules of the art from the 10th and 11th centuries, have constituted the sum and substance of Hellenic Christian art. A school of the arts has been established in Athens, with good promise of success. Prizes for sculpture and painting have been founded by a wealthy citizen, Mr. Contostavlos, known in this country as one of the Greek agents sent by the revolutionary government on the business of the Greek frigates. These prizes are the subject of an annual competition. At the exhibition of 1856, the prize was awarded for subjects selected by the queen: for sculpture, a shepherd; for a picture, a child at prayer. Two brothers, named Phytalis, divided the prize for sculpture, being adjudged by the committee equal in merit. A French artist, a member of the commission, said: "These statues, if exhibited at Paris, would better sustain the cause of Greece than the arguments of your most brilliant defenders." An archaeological society has been

established in Athens for many years. It is under the editorial management of Mr. Pitakes, the conservator of antiquities. Many valuable contributions, both in the way of newly discovered facts in archæology, and original contributions by the scholars of Athens, have appeared in its pages. A society of medicine, and one of natural history, also have been some time in operation, and are doing a good work. A literary periodical, published semi-monthly, bearing the name of the "Pandora," is a very interesting and able magazine, containing original tales, poems, reviews, and the like, and is the organ of many of the most learned men in Athens. Among the remarkable literary institutions of Athens may also be mentioned the annual competition for the prize of poetry, founded 7 years ago by Ambrosios Rhalles, a Greek merchant at Trieste. It is celebrated on April 6 (March 26), the anniversary of the opening of the Greek revolution. After the religious services in the cathedral a brilliant assembly is held in the university to hear the result of the competition. The prize is awarded by a committee of the professors of the university, one of whom reads the report. In 1856 the report was drawn by Philippos Johannis. He gave a sketch of the competitions of previous years, and stated that the number of the pieces offered had regularly increased since the first establishment of the prize. That year there were 14 in all, which the committee divided into 3 classes: 1, good for nothing; 2, respectable; 3, excellent. Of the first class there were 5; of the second, 3; of the third, or excellent, 6. To show the faithful manner in which the duty of examination was performed, it should be said that the discourse of the professor was very elaborate, containing criticisms upon the several pieces, with extracts from them, and occupying more than an hour in the reading. Of the first class he said, "The invention displayed in them is very poor, the arrangement and distribution entirely defective, the conceptions are commonplace, and many of them false. The style is not only low and feeble, but, in 3 of them, full even of grammatical errors." The other pieces are discussed with equal freedom and candor. Last year (1857) 20 pieces were offered, of which 3 were of such excellence that the committee, consisting of 5 professors, were unable to make any distinction between them. One was a satiric poem; another, a poem on the isle of Chios; and the third, a drama in 5 acts, on the story of Maria Doxopatreas, a heroine of the Frankish Period, mentioned in the chronicle of Romania. We think these scenes also quite characteristic of Athens. When the Crimean war broke out it occasioned a lively sensation in the capital. It was impossible for the Greeks of Greece not to sympathize with the movements of the Greeks of Turkey, who thought the long-expected opportunity had come to strike another blow for national independence. The movements in Athens and other parts of Greece were suppressed by an English

and French army of occupation stationed in and around Athens. In Oct. 1854, that terrible scourge, the Asiatic cholera, appeared in Athens and made dreadful ravages among the population. Among the victims was the only surviving son of the "Maid of Athens," a very promising young man of 18, bearing the classical name of Aristoteles. Many hundreds died, and thousands who could escape fled to the villages in the neighborhood and the mountains. As usual, crimes were dreadfully multiplied. The details of the thefts and robberies committed in the midst of suffering and confusion; the extortions of the dealers and monopolizers; the frauds in weights and measures; the adulteration of provisions, bring up in many of its features the terrible picture of the Plague of Athens, drawn in such dark colors by Thucydides. Chrysanthos Konophaos, one of the chief ecclesiastical dignitaries, addressed to the people an earnest exhortation through the public press. It was published in the *Athena* of Dec. 8, and presented a faithful recapitulation of the sins of the people, with urgent warnings to repent and cast themselves on the infinite mercy of God. The same paper contains a vivid description of the scene by an eye-witness. After enumerating the most conspicuous of the victims—professors, physicians, students, clergymen—he says, "The sun himself hangs dimly over the ridge of Hymettus, and the sad sky is overcast with motionless clouds; all nature seems to be in a stupor; not a leaf stirs; a disagreeable and suffocating heat is in the atmosphere; the very birds flee from the place of death. King Otho and Queen Amelia, the ministers of the foreign powers, the public physicians, a few hundred good citizens, alone remain; the rest, sick, dying, or dead. The city of Athens—the capital of the East—appears like another Pompeii, in whose streets men once walked. The shops, magazines, stores, coffee-houses, the very windows of the houses, are closed. . . . The people that still remained alive, with bended knees and flowing tears, prostrated themselves, self-moved, before the thrice-blessed mother of God, and the Kyrie Eleison resounded through the streets. Bowing their faces to the earth with remorse, all cast themselves upon the mercy of the Most High; men, women, young and old, small and great, followed in procession the sacred pictures, chanting the *Kyrie eleison* with tears." Among those who were carried off by this scourge were Mr. Benthyllos, one of the professors in the university, a professor in one of the gymnasia, and Miss Polytime Kouskouras, a much esteemed teacher in a girls' school, who had taught in public schools 17 years. In each of these cases the minister of public instruction sent a letter of condolence to the surviving friends, which was published by authority in the official paper. A grant of money was made from the treasury to the father of Polytime, "as a small token of the gratitude due from the public to those who serve it with zeal." These facts are perhaps sufficient to illustrate the de-

votion to intellectual pursuits which reigns in modern as it did in ancient Athens. At present things have returned to their former state. The ravages of the cholera have been effaced. The army of occupation was withdrawn from Athens after the close of the Crimean war. Robberies have ceased, and the Klephts, who, in the period of confusion, menaced the neighborhood of the city, and made it dangerous to ride to Mt. Pentelcus, have been suppressed.—The visitor to Athens approaches the city either by way of the gulf of Corinth, or coming up from Sunium. He passes near many spots renowned in history and song, whichever route he chooses. The foreland of Sunium is still crowned with the glittering columns of the temple of Sunian Athena. Ægina rises picturesquely from the Saronic gulf, and with the solemn ruins of the temple of the Panhellenian Zeus, looks over the blue sea, to the mountains and plain of Attica, to the Acropolis, surmounted by the Erechtheum and the Parthenon. Entering the harbor of Piræus, the remains of the old encircling walls remind the traveller of the days of Themistocles, whose tomb is by the wave-beaten, rocky shore on his right. He lands on the quay, passes rapidly through the streets of the busy town, enters the plain between the massive foundations of the Long Walls, which have elsewhere utterly disappeared, and, with the old olive groves on his left, and the Cephissus murmuring through them, drives in half an hour to Athens. He enters the city, having passed the temple of Theseus, the best preserved of all the remains of antiquity, on his right. Two sources of intense interest immediately open upon his mind—the living Athenian people, their language, institutions, education, personal appearance, manners, and the wonderful monuments still remaining of the genius of the ancient Athenian Demos. As he walks the streets he listens to the Greek language, not spoken as it was in the days of Demosthenes, but still Greek. The signs over the shops are in good Greek. The notices of the Austrian and French steamers at the post office are in good Greek, though the word for steamboat, *ατμοπλοῦν*, would puzzle the orator, should he suddenly return to earth. The newspapers are published in good Greek; though discussing many subjects which the orator never heard of in his lifetime. The constitution is in good Greek: but the freedom of the press—*λευτερία του τυπου*—would at first convey no intelligible idea to his mind. Over a cigar shop he would read *Καπνοπωλειον*, and wonder what the man could mean by selling smoke. He was a water-drinker, so that even champagne of the first quality—*Σαμπανια της πρωτης ποιουητος*—advertised on the opposite side of the street, would not entice him by its sparkle. He would recognize the *κουρειον*, the barber's shop—the centre of gossip and news as in ancient times. The churches, with their Byzantine architecture, would offend his taste, formed as it was by contemplating the Propylæa, and the Parthenon, to which he used to appeal

in his orations to the people of Athens;—but entering he would hear, in good ancient Greek, the liturgy of a religion, first introduced more than 8 centuries after his death, and he assuredly would find in its impressive lessons much that would be congenial to his own magnanimous spirit, and much that strikes a deeper note than even his master Plato ever sounded. He would enter the senate or the chamber of deputies. Most of the legislative discussions would be intelligible to him; but one topic would surprise him—a public loan negotiated through the *εθνικη τραπεζα*—the national bank. Stepping into the gymnasium, he might hear his own oration on the "Crown" commented upon in excellent Greek, to classes of bright-eyed Hellenic youth, within a few minutes' walk from the spot where it was delivered; and perhaps he would be able to explain what he meant by burning the *γερρα*. At the *καταστημα ευρωπαικων φορεματων* he would be puzzled at first by the long-tailed dress-coat, the hat, the cravat, or *λαιμοδετης*, which he could only conjecture to be a halter. The titles of civil and ecclesiastical dignitaries would astonish him—*Majesty*, *Μεγαλειότης*—*Excellency*, *Εξοχότης*—*Holiness*, *Οσιότης*—*All-holiness*, *Πανοσιότης*—the *Honorable gentleman*, *Ὁ Επτιμος Κυριος*—the *Lady of Honor*, *Ἡ Κυρία της τιμης*. In short, he would find the language substantially the same, but largely applied to ideas wholly new to him. It would take him some time to *orient* himself. But he would find the mountains, sky, the sparkling sea, and the unutterable beauty of the atmosphere, the same. The Agora he would find a solitude, peopled with mighty memories. Wandering up the Pnyx, that too would be solitary; but there is the place of the assemblies—there stands the immortal rock—the Bema—from which he and his great predecessors addressed the Athenian Demos. Had he chanced to go thither, on Dec. 21, the queen's birthday, in 1858, he would have found a multitude of citizens, in holiday attire, standing in the Pnyx, and listening to a learned Greek, who discoursed from the steps of the Bema in good ancient Greek, upon the preëminence of the Greek language, and of the old masters. Not one word of this would have been strange to Demosthenes. We have called up the august shade in order to illustrate briefly the changes that the language has undergone during 20 centuries, in his native city, and its identity. In another part of this article we have alluded, with more or less minuteness, to the principal structures in Athens, which were the wonder of the world in ancient times, and which are scarcely less the wonder of the world in their majestic ruins now. Demosthenes said in one of his orations: "Our ancestors were inspired, not by the desire of wealth, but by the love of glory; and therefore they have left us immortal possessions, the memory of illustrious deeds, and the beauty of the works consecrated to them." As he spoke these words he had the temples, porticos, and statues of the agora around him;

above the temple of Wingless Victory—the Propylæa with the broad marble steps, the Doric porticoes, the fine bronze gates opening through the marble wall, the Athena Promachos, the Parthenon, the Erechtheum, and the marble population of heroes and gods, standing in the open spaces of the Acropolis. Plutarch, 5 centuries later, says: "These works appear, at the present moment, fresh and newly wrought: they seem to wear the bloom of perpetual youth, its glow untouched by time, as if they breathed the breath of immortality, and had a soul that age could never reach." We have room only for a few remarks on the present condition of some of these ancient monuments. The soil of Athens is full of fragments of statues, columns, and other works of the ancients. Bits of the marble seats of the stadium are easily found in the rubbish below. At the S. E. angle of the Acropolis, the outline of the Dionysiac theatre, and some of the seats hewn in the solid rock, together with portions of the massive foundations on which the stage-building rested, may easily be traced. Fragments of a choragic monument bearing the name of Thrasylus, and dating 880 B. C., lie about the upper part of the concave, where an ancient cavern, once sacred to Bacchus, and now dedicated to the Panagia Speliotissa, reminds one at once of the classic and the Christian times. Numerous fragments of ancient marbles are embedded in the walls of the churches, and by the contrast of their style to the rest of the building produce a strange effect. The surface of the Acropolis is thickly strewn with pieces of marble blocks, columns, statues, and votive alabs; and in the left hand apartment of the Propylæa, the ancient Pinacotheca, a picture gallery, Mr. Pittakes has accumulated a large number of every species of fragment, but especially alabs with inscriptions belonging to every age, and many of them of historical importance. The Theseum is used as a museum of ancient sculptures. Many monumental *stelæ* of the most interesting character, with beautiful groups in low relief, and touching funereal inscriptions, are collected there. But the most curious and important marbles are a series of alabs, found (in 1884) in the Piræus, containing records of the Athenian navy; lists of ships with their names; inventories of rigging and furniture; names of shipbuilders; names of statesmen, such as Demades and Demosthenes, who were connected with the navy department; and numerous other interesting and valuable particulars. These inscriptions are very clearly cut, and, except where the marble has been broken, easily read; and they cover a considerable period of the public life of Demosthenes. The temple of Theseus, as we have already stated, is one of the best preserved buildings in Greece. It is of the Doric order, 104 feet in length by 45 in breadth. It has 6 columns at each end, and 18 on each side, of 8 feet 4 inches in diameter, and 19 feet high. From the stylobate to the upper angle of the

pediment, the height is 81 feet. The sculptures on the pediments are all lost. Those in the metopes are supposed to relate to the labors of Hercules and Theseus. Of the vast temple of Olympian Zeus, the platform on which it stood, and 16 Corinthian columns, one of which was overthrown in 1852 by a hurricane, are all that remain. The peribolus of the temple was 680 feet long, and 468 broad; the temple itself 854 feet by 171 feet. It had 10 columns on each front, and probably 20 on each flank; the height from the pavement to the top of the capitals, 55½ feet; diameter at the base, 6 feet 4 inches. The statue of the god was of ivory and gold. Near the theatre of Bacchus still stands the choragic monument of Lysicrates, erected on the street of tripods in 335 B. C., to commemorate a musical victory. It is a circular structure, 8 feet in diameter, standing on a square basement, and the whole height about 84 feet. It is the earliest specimen of Corinthian architecture. This exquisite little monument was saved from destruction by having been built into the walls of a monastery: the monastery is now in ruins, and the monument of Lysicrates stands almost complete. The tripod by which it was surmounted is gone, but the inscription on the architrave is still legible. At the south-west angle of the Acropolis stands the theatre or odeon of Regilla, built by Herodes Atticus. There are important remains of this structure: but the interior is nearly filled with an immense mass of rubbish. Passing over the deserted valley where was the ancient agora, we reach the hill of the Muses, on which is a considerable portion of the monument of Philopappus—a late work, and of no particular interest. Next to this in the north is the hill of the Pnyx—the place of the popular assembly—and the Bema, of which we have already spoken; and over against this rises the Areopagus. But the noblest works of the Athenian architects were on the Acropolis. The ascent is at the western end. The chief buildings of the Periclean age on this citadel were the Propylæa, the Erechtheum, and the Parthenon. The Propylæa served at once as an architectural embellishment, and a military defence of the Acropolis. Among the ancients it was more admired than even the Parthenon, for the skill with which the difficulties of the ground were overcome, and for the grandeur of the general effect. The approach was a flight of 60 marble steps, and was 70 feet broad. At the top of the steps was a portico of 6 fluted Doric columns, 5 feet in diameter, 29 feet high. The side wings, on platforms, 78 feet apart, had 8 Doric columns *in antis*, fronting upon the grand staircase. The north wing contained the Pinacotheca, a hall 85 feet by 80; the hall of the south wing was 27 feet by 16. Behind the Doric hexastyle was a magnificent hall 60 feet broad, 44 feet deep, and 39 feet high, with a marble ceiling resting on enormous beams, supported by 8 Ionic columns, on each side of the passage. At the east end of

this hall was the wall, through which there were 5 entrances, with doors or gates. The central opening, through which the Panathenaic procession passed, was 18 feet wide, 24 feet high; those next the central are, on each side, 9½ feet wide, and the smallest 5 feet, the height varying in proportion. These gates were the only public entrance into the Acropolis. Within the wall, *i. e.* on the eastern side, was another hall, 19 feet deep, its floor elevated about 4½ feet above the western, and terminated by another Doric portico, of 6 columns. The pediments and ceilings of this admirable structure have been destroyed. Most of the columns remain, some of them entire, and others more or less broken, with heavy fragments of the architraves. Passing through the Propylææ, we come to the Erechtheum, on the left or northern side of the Acropolis, and the Parthenon on the right, near the southern or Cimonian wall. The form of the singular structure first mentioned was oblong, with a portico of 6 Ionic columns at the east end, and a kind of transept at the west, a portico of 4 columns on the north, and the portico of the Caryatides, standing on a basement 8 feet high, on the south. At the western end there is a basement, on which are 4 Ionic columns half engaged in the wall, and supporting a pediment. The eastern and western divisions of the temple are on different levels, the eastern being 98 feet higher than the western. Enough remains of this extraordinary and beautiful temple, to give a perfectly correct idea of its outward form; but the interior is in so ruinous a condition that the distribution and arrangement of the division are subject to the greatest doubt. The numerous antiquarian questions which suggest themselves here, cannot be discussed in this place.—We come now to the Parthenon, the noblest monument in Athens, and the world. The contrast between this temple and the Erechtheum is strikingly beautiful. We have already incidentally alluded to the principal points in its history, and the various fortunes in which it has shared. It was built of Pentelic marble, under the superintendence of Phidias, by Ictinus and Callicrates. It stands on a basis approached by 8 steps, each 1 foot 9 inches high, 2 feet and about 4 inches wide. Its breadth, on the upper step, is 101.88 feet; its length 228 feet; the height to the top of the pediment from the upper step of the stylobate, 59 feet, and with the stylobate, 64 feet. The temple is Doric, octostyle, or with 8 columns at each end, and peripteral, or colonnaded all round, there being 15 columns each side, not counting those at the corners—46 in all. The length of the *σῆκος*, or body of the temple, is 198 feet, and its breadth 71 feet, omitting fractions. The space between the peristyle and the wall is 9 feet wide at the sides, and 11 feet at the fronts. The body is divided by a transverse wall into 2 unequal portions; the eastern was the *naos* proper, an apartment for the statue of the goddess, 98 feet in length; the western, the *episthodomos*, which was commonly used as the

treasury of the city, 43 feet long. Within the peristyle, at each end, were 8 columns, 83 feet high, on a stylobate of 2 steps. Within the *naos*, was a range of 10 Doric columns on each side, and 3 at the west end, forming 3 sides of a quadrangle; above them, an architrave supported an upper range of columns, which Wheeler, at the time of whose visit they were still standing, calls a kind of gallery; 14 feet distant from the western columns is the pavement of Piraic stone, on which the great chryselephantine statue of Athena was placed. Beside the internal decorations, the outside of the temple was ornamented with three classes of sculpture: 1. The sculptures of the pediments, being independent statues resting upon the deep cornice. The subject of those on the eastern pediment was the birth of Athena; of those on the western, the contest between Poseidon and Athena, for the possession of Attica. 2. The groups in the metopes, 92 in number, representing combats of Hercules and Theseus, the Centaurs and Amazons, and perhaps some figures of the Persian war. These groups were executed in high relief. 3. The frieze round the upper border of the cella of the Parthenon contained a representation in low relief of the Panathenaic procession. All these classes of sculpture were in the highest style of the art, executed by Phidias himself, or under his immediate direction. Most of them were in place when Wheeler visited Athens, in 1876; and drawings of the figures in the pediments were made in 1874, by Carrey, a French architect, in the suite of the Marquis de Nointel, minister of France at the Porte. The interior of the temple was thrown down in 1687, by the explosion of a bomb in the Turkish powder magazine, as has already been stated. The front columns of the peristyle escaped, but 8 on the north side, and 6 on the south, were overthrown. Morosini, in endeavoring to remove some of the figures on the pediments, broke them, and otherwise did great mischief. At the beginning of the present century, Lord Elgin dismantled a considerable part of the Parthenon of the remaining sculptures, which form the most precious treasures of the British museum, at the present moment. A question has been much discussed, as to whether any portion of the exterior of the temple was decorated with painting. It is hardly possible to doubt the fact, after a personal examination. Many of the mouldings have traces of beautifully drawn patterns. Under the cornices, there are delicate tints of blue and red; and of blue in the triglyphs. Architraves and broader surfaces were tinged with ochre. All these figures were executed so delicately and exquisitely, that it is impossible to accept the theory sometimes advanced, of their being the work of subsequent barbarous ages. There are other traces of colors on the inner surface of the portion of the walls still standing, which evidently belong to a period after the stonemasons, Eulogius and Apollon, converted the Parthenon into a church. Among the inscriptions there is one,

found in 1886, containing a record of money paid for polychromatic decorations. The Parthenon was built in the best period of architecture, and under the inspiration of the highest genius in art; and the best attainments of science were combined in producing its exquisite perfections. The pathetic beauty of its decay is indescribable. The impression it makes is that of a solemn and wondrous harmony. Its aspect is simple, but scientific investigation has not yet exhausted its beauties and refinements. The combination of the most delicate architectural proportions, with the sculptural compositions, of which enough in each class remains, after all the ruin wrought by time, and war, and barbarism, to give us a lively idea of their admirable execution; the variety of these compositions, differing in character and size according to their position and subjects, but all relating to a central idea which harmonizes them, must have been magnificent beyond description, when the temple first stood in its fresh glory, under the sky of Attica. But delicacies of construction have not ceased to be discovered in this wonderful building. In 1887, Pennethorne, an English traveller, noticed the inclination of the columns. Hofer, Schubart, and others, have examined the subject, and published their observations upon the inclination of the columns, and the curved lines of the stylobate and architraves. Mr. Penrose, an English scholar and architect, visited Athens in 1845, and was afterward sent by the society of dilettanti to complete the investigations he had already commenced. The results were published in a splendid folio, 1851. They may be briefly summed up thus: The lines which in ordinary architecture are straight, in the Doric temples at Athens are delicate curves. The edges of the steps, and the lines of the entablatures, are convex curves, lying in vertical planes, and nearly parallel, and the curves are conic sections, the middle of the stylobate rising several inches above the extremities. The external lines of the columns are curved also, forming a hyperbolic entasis. The axis of the columns incline inward, so that opposite pairs, if produced sufficiently far, would meet. The spaces of the inter-columniations, and the size of the capitals, vary slightly, according to their position. From the usual points of view, these variations and curves are not perceptible, but they produce by their combination the effect of perfect harmony and regularity, and the absence of these refinements is the cause of the universal failure of buildings constructed in modern times, according to what have been supposed to be the principles of Hellenic architecture. This subject is treated by Mr. Penrose in greater detail, and with remarkable precision; also by M. Beulé, in a learned work, entitled *L'acropole d'Athènes*, Paris, 1853-'55.

ATHENS, a county in the S. E. part of Ohio, on the Ohio river. It has an extremely fertile soil, and is well wooded, and watered by the Hocking. It abounds in iron ore and coal, and large quantities of salt are manufactured

throughout the county. The Hocking canal extends from the centre of the county to the Ohio canal. In 1850 the productions were 448,546 bushels of Indian corn, 72,146 of wheat, 92,990 pounds of wool, 257,802 of butter, and 12,188 tons of hay. There were 24 churches, 1 newspaper office, and 8,936 pupils attending public schools. Pop. 18,215.

ATHENS, a prosperous town of Clarke county, Georgia, situated on the Oconee river at the northern end of the Athens branch railroad, is the centre of a large cotton growing region, has a cotton manufactory of large capacity, while within a few miles there are 8 others. It contains Franklin college, a number of churches, a bank, and 5 newspapers. Pop. 3,700.

ATHERSTONE, a market town of England, in the county of Warwick, and about 20 miles N. N. E. of the town of that name. The town consists mainly of one street, and contains an ancient chapel, now much defaced by modern alterations. In August, 1745, Atherstone was the scene of a conference between the Earl of Richmond, afterward Henry VII., whose army was encamped near the old church, and the 3 Stanleys, the result of which was the overthrow of Richard III. at Bosworth Field, 3 days afterward.

ATHERTON, CHARLES G., an American senator, born at Amherst, N. H., July 4, 1804, died Nov. 15, 1858. He graduated at Harvard college in 1822, and was educated to the law, but engaged in politics while yet a young man. For many years he was a member of the N. H. legislature, and for 8 years speaker of the House. He was elected to the federal house of representatives in 1837. On Dec. 11, 1838, being a member of the committee of ways and means, he introduced, under a suspension of the rules, a series of resolutions, declaring that "congress has no jurisdiction over the institution of slavery in the several states of the confederacy;" that "petitions for its abolition in the district of Columbia and the territories are part of a plan for its removal from the states;" that "such agitation is contrary to the spirit of the constitution;" that "the equality of the several states precludes congress from an attempt to act in favor of or against their several institutions;" that "all such attempts being in violation of the constitution," "every petition, memorial, resolution, proposition, or paper, touching or relating in any way or to any extent whatever to slavery, or to the abolition thereof, shall, on the presentation thereof, without any further action thereon, be laid on the table without being debated, printed, or referred." These resolutions were passed, under the previous question, by a vote of 126 to 78. Although not themselves re-introduced they formed the basis of the 21st rule of the next congress, by which all such petitions, upon presentation, were considered as objected to, and the question of their reception laid on the table. The rule was vigorously opposed as contrary to the right of petition,

but was supported on the grounds of public policy, and for the suppression of agitation. It was maintained for several sessions, until 1845, but finally yielded, partly to objections on the ground of principle, partly to the experience of its inefficiency. Mr. Atherton continued in the house of representatives until 1848, when he was elected to the senate, where he remained until 1849. He was again elected in 1852. He acted steadily with the democratic party, and was considered at the time of his death as the wealthiest citizen of New Hampshire.

ATHERTON, CHARLES HUMPHREY, father of the preceding, born at Amherst, N. H., Aug. 14, 1778, died Jan. 8, 1858, graduated at Harvard college in 1794. He was a representative in congress from 1815 to 1817, and held the office of register of probate for 39 years, from 1798 to 1837. He was for many years at the head of the bar in Hillsborough county, and contributed many valuable papers to the history of his native state.

ATHERTON, HUMPHREY, a military officer, whose name is mentioned with much honor in the early annals of Massachusetts. He came from England about 1686, when he signed the covenant of the church at Dorchester. He was admitted as a freeman in 1688, and was deputy in the general court from Dorchester for that year, and also in 1689, '41, and in '58, from Springfield, when he was chosen speaker. The next year he was chosen assistant, and soon after major-general. He was much employed in negotiations with the Indians, and made use of his influence with them in a great purchase in the colony of Rhode Island. He died by a fall from his horse at Boston, Sept. 17, 1661. The manner of his death is made matter of comment by Hubbard as one of the judgments of God.

ATHIAS, EMANUEL BEN JOSEPH, a Jewish rabbi, a printer in Amsterdam in the 17th century, principally noted for having published 2 editions of the old Testament in Hebrew in 1661 and 1667, valuable for their correctness, and on which are founded most of the modern editions. They are remarkable for being the first in which the verses were marked with Arabic figures. So much satisfaction did these improvements give to the government of Holland, that the states-general conferred upon Athias a chain of gold and a medal.

ATHLETÆ (Gr. ἀθλα, prizes), a name applied by the Greeks and Romans to persons who contended, in contests of strength or agility, for honor and pecuniary or other rewards. In the early periods of Greek civilization, we do not hear of professional combatants, those who contended at the Olympic, Nemean, and other public games, being amateurs; but afterward a profession of athletes gradually formed itself. Those athletes who conquered at any of the great national festivals of Hellas were received in their native states, and even beyond their limits, with uncommon honors. A breach was

made in the walls of the victor's native city for his reception; he passed through the streets, in a chariot drawn by 4 white horses, to the temple of the guardian deity of the state, where a solemn service was celebrated. His statue was set up in the market-place, he was relieved from the payment of taxes, and enjoyed a seat of honor on all public occasions. The great national festivals at which such honors might be won, were, for a long time, exclusively the Olympic, Isthmian, Nemean, and Pythian. At Athens such victors, according to a law of Solon, received a prize of 500 drachmæ for an Olympic crown, and 100 drachmæ for a crown won at the other 3 games. At Sparta they fought near the king's person. Athletes were first introduced into Rome by Marcus Fulvius, at the conclusion of the Attolian war, 186 B. C. Nero was passionately fond of the Greek athletes. At Rome they formed a college, which enjoyed certain privileges, including immunity from taxes. The athletes were trained by professional trainers. Their food, according to the early writers, consisted of dried figs, weak cheese, and vegetables; later it was the very reverse, and approximated more to that used by English prize-fighters, namely, a generous quantity of animal food, with a very small allowance of coarse unleavened bread. They had a minimum of food, under which they might not eat. This minimum was so large that they used to fall into a feverish sleep after it, like an overgorged boa-constrictor. While under training, wine and women were strictly forbidden. Their place of exercise was called the *palastra*. Here and in the public arena they appeared naked, though in the *Iliad* they are represented as being girded about the loins. They were anointed with oil, with a view to make the limbs more supple, and prevent the waste of stamina from perspiration. After the contest the athletes were scraped and rubbed by the *aliptæ*, like race-horses by stable boys. The protecting gods of the athletes were Zeus, Hercules, and the Dioscuri.

ATHLONE, a market town and parliamentary borough in Ireland, lying on both sides of the river Shannon, partly in Westmeath, and partly in Roscommon, 76 miles W. from Dublin. Pop. in 1851, 6,218. The opposite shores of the river are here united by a handsome bridge, constructed in 1844, and a canal has been formed to avoid the rapids at this point, thus making navigation practicable for 71 miles higher up the stream. The castle occupies an eminence on the right bank of the river, and with its outworks covers a space of 15 acres. It was strongly fortified during the last war with France, and now contains 2 magazines, an ordnance store, an armory with 15,000 stand of arms, and barracks for 1,500 troops. After the battle of the Boyne, William III. besieged Athlone unsuccessfully, but it was taken by Gen. Ginkell in the following year. The town has 2 churches of the establishment, 2 Catholic chapels, and several dissenting meet-

ing-houses. It has a distillery, a brewery, and a tannery. An active trade is carried on by steamers with Limerick and Shannon harbor, and with Dublin by the grand and royal canals.

ATHOL, *ATHOLZ*, or *ATHOLL*, a district in the northern part of Perthshire, Scotland. It is about 45 miles in length, by 30 in breadth, and is picturesque and mountainous, some of the summits attaining an elevation of more than 3,000 feet. It contains several lakes, and beautiful valleys, among which is the pass of Killiecrankie, where Grahame of Claverhouse gained a victory, and met his death, July 17, 1689. Agriculture is carried on in the valleys, while on the hills sheep and cattle are pastured. The duke of Athol receives his title from this district, where he possesses extensive estates, on which a large number of red deer, with which the country was formerly well stocked, are still kept.

ATHOS. At the north-western extremity of the *Ægean* Archipelago, that sea is indented by a large peninsula, itself ending in 3 remarkable smaller peninsulas. The most easterly of the 3 is the peninsula of Athos, about 40 miles long and 4 broad, and with a trend due N. E., and included in the present Turkish province of Salonica. The peninsula of Athos is mountainous, and cut by numerous ravines. At the foot or extremity of the peninsula stands the mountain which has given it its name. Mt. Athos is about 6,800 feet in height, with a peak of white limestone, while its lower rocks are of gneiss and argillaceous slate. It has altogether a unique situation, and has therefore been an object of interest both to ancients and moderns. The Christians early regarded it with religious veneration, and built upon it many chapels and places of devotion, some of which may be dated back as early as the time of Constantine. The monasteries of this mountain are 20 in number, and some of them are surrounded by high turrets. They have been the depositories, in several instances, of very valuable libraries, the well-preserved treasures of which have made important additions, within the last century, to our Greek classic literature. The number of monks in these convents is estimated at 8,000. The mountain, and, indeed, the entire peninsula, is called the Holy mountain. No female, not even of animals, is permitted to enter the peninsula. The monks devote themselves to a life of the most rigid asceticism. The scenery of the mountain and adjacent country is picturesque in the extreme. The sides of the mountain are flanked with vast forests of pines, oaks, and chestnuts, the pines growing to an immense size. The shores of the cape are so bluff and precipitous that 80 rods from shore gives 100 fathoms. It was across the mouth of the peninsula of Athos that Xerxes cut a canal for his ships, in his invasion of Greece. The remains of this canal are still distinctly visible, through most of its extent. Near the middle of its course it is not discernible, probably having

been filled up to allow a more ready land egress and ingress to the peninsula. The canal, according to ancient history, occupied the entire working force of the army 8 years in its construction.

ATHWART, in sea phrase (*Dan. a and teert*, transverse), means across the line of a ship's course.—Athwart the bows means at right angles, or nearly so, to the bows.—Athwart-hawse, the situation of a ship when she is driven or drifts across the forepart of another, whether in contact or at a short distance.—Athwart the fore-foot is said of the track of a cannon-ball fired across the onward course of a pursued or signalled ship to bring her to, or to cause her to shorten sail, so that she may be examined.

ATITLAN, the name of a town, lake, and volcano, of Central America, 80 miles N. W. of Guatemala. The lake is 24 miles long, and 10 wide. The town, Santiago de Atitlan, is situated on its south side. The height of the volcano is 12,500 feet.

ATKINSON, THEODORE, an eminent citizen of New Hampshire, born at Newcastle, Dec. 20, 1697, died in 1779, graduated at Harvard university in 1718, was afterward several times in actual service during the war with the French and Indians, and was appointed one of the commissioners sent to Canada for the release of prisoners. He held at various times the offices of clerk of the court of common pleas, collector, naval officer, and sheriff of the province; he was also appointed delegate to the congress at Albany in 1754, and the same year chief justice of the state. The revolution deprived him of office. Mr. Atkinson left a legacy of £200 to the Episcopal church of Portsmouth, the interest of which was to be expended in bread for distribution each Sunday.

ATKYNS, SIR ROBERT, born in 1621, died in 1709, son of Sir Edward Atkyns, who was an English judge during the commonwealth, and the reign of Charles II., and died in 1669, aged 82. Sir Robert, educated at Oxford, was called to the bar in 1645, made a knight of the Bath at the coronation of Charles II., in 1661, and soon after elected member of parliament for East Looe, for which borough he continued to sit until 1672, when he was made judge of the court of common pleas. He had previously been recorder of Bristol, and solicitor-general. As a judge, he was learned and impartial, though, on the trial of the parties charged with the popish plot of 1679, he showed himself not free from the prevalent anti-Catholic feeling of the time. Dissatisfied with the public measures and private influences directed against the independence of the judges, he quitted the bench in 1680, it is not known whether by resignation or dismissal. In 1682, having taken part in a civic election at Bristol, said to have been irregularly conducted, he was indicted by the mayor and corporation, to whom he was opposed, and, with two others, tried and convicted at the assizes, for a riot and conspiracy.

The superior court arrested the judgment, upon a flaw in the indictment. Resigning his recordership, Sir Robert retired to his family seat in Gloucestershire, where for some years he took no ostensible part in public business, though elected to the only parliament called by James II. In his retirement, he wrote a powerful legal argument against the king's power to dispense with penal statutes, and aided Lord William Russell, with legal advice, on his trial for high treason in 1688, and, after the flight of James II., published two pamphlets in vindication of Lord William, and in favor of the reversal of his attainder. In 1689, when Sir William Williams was prosecuted for having, as speaker, and by command of the commons, signed the orders to print Dangerfield's narrative of the popish plot, Sir Robert Atkins published a tract showing it was a question of parliamentary jurisdiction, with which the courts of law could not interfere. When William III. made his judicial appointments, in February, 1689, Sir Robert Atkins was appointed chief baron of the exchequer, and in the same year was chosen speaker of the house of lords. In 1694 he finally retired to Sapperton Hall, near Cirencester, where he died at the age of 88. His parliamentary and political tracts were republished in one volume in 1784.

ATLANTA, a city of De Kalb county, Georgia, and a place of great business activity, 101 miles N. W. of Macon, 171 W. of Augusta, and 291 from Nashville. Four lines of railroad, the Georgia road, from Augusta, the Macon and Western, from Macon, the Atlantic and Western, from Chattanooga, Tenn., and the La Grange, from West Point, 72 miles distant, terminate here. It is consequently a depot for the cotton and grain of several of the adjacent counties. Atlanta was laid out in 1845, and has grown very rapidly. It is now one of the largest and most important places in northern Georgia. Its site is elevated, and there is little sickness. It received a city charter in 1847. It has 6 churches, 2 newspapers, and a bank. Population in 1853, about 4,000.

ATLANTIC, a county situated in the S. S. E. part of New Jersey, has about 620 square miles of territory, and 8,961 inhabitants. It was set off from Gloucester county in 1887. The Atlantic ocean borders it on the S. E., where it is indented by Absecon, and several other bays, which are planted with oysters, and other shell-fish. The surface of the county is low and flat; it is marshy near the coast, and the soil further inland light and sandy. The county seat is at Cape May Landing. The productions in 1850 were 68,868 bushels of Indian corn, 16,592 of potatoes, 8,350 of rye, and 9,569 tons of hay. There were 18 churches, and 840 pupils attending public schools. Pop. in 1855, 3,608.

ATLANTIC OCEAN, that part of the great deep lying between the western coast of Europe and Africa and the eastern coasts of America, extending from the Arctic to the Antarctic circle, and including the space between the me-

ridians of Cape Horn and the Cape of Good Hope. The portion north of the equator is called the North Atlantic and that on the south the Ethiopic or South Atlantic. The part which properly may be considered the broadest, that lying between the coasts of Georgia and Africa, is 8,600 miles, or, if we include the Gulf of Mexico, 4,700 in width. The narrowest part, between Cape Frio and the coast of Africa, is 1,580 miles.—The middle portion of the North Atlantic, called the Sea of Saragossa, has been represented as a "stagnant and weedy sea"—"generating on its calm surface what has been well called an oceanic meadow," sufficiently extended to retard the progress of vessels; but this is not so. The belt of calms called the horse latitudes crosses this area, but it is narrow compared with this "weedy sea," which has its currents and breezes. To the improvements which have been made in navigation and in the models of ships, we are indebted for the average time of passage of sailing vessels being shortened.—With the knowledge which we now possess of the routes pursued by sailing vessels in crossing the Atlantic, one cannot but be surprised at the short passage made by Columbus on his first voyage. With no chart to guide him beyond the Canaries, and in vessels poorly equipped, he was 69 days from the bar of Saltez to his land-fall on the western continent, 25 of which he spent in Gomera, one of the Canary Islands. The distance sailed was about 4,000 miles. Columbus hove to at night as a matter of safety, when seeking for land to be discovered, and this same practice was continued until our own times for the same reason. It was the custom for navigators bound for places within the tropics, until chronometers came into common use, to get in the latitude of the place sought well to windward, sufficient to compensate for any error in their dead reckoning, and then run down, as it was called, to the place. We have known frequently a week to be lost in this anxious work, with a fair wind, running in the daytime and lying to the greater part of the night.—ROUTES. Sailing vessels from the United States to Europe usually take advantage of the Gulf stream. When fairly within it the weather is generally good, but on the edge it is uncertain and squally. The Gulf stream on this route is not properly crossed, but you leave it, on the same side as you entered it, as soon after you pass the meridian of 85° as is expedient. The route by steamers would not be different.—From Europe to North America the most direct route is that of an arc of a great circle, but we cannot follow it in all cases to advantage. In the route to Europe we take advantage of the Gulf stream, which lengthened the distance; on our return we avoid this stream, but go further north to avail ourselves of favorable winds. If bound to any port north of Cape Hatteras, we keep well to the north of our course, which is, until we pass the meridian of 88°, toward Cape Race; when on this meridian we steer more to the south, so as to get on the

parallel of 48° before we are on the meridian of Sable Island, which we must pass to the south, on account of the dangerous fogs, if we are bound to any port south of Halifax. Then we may shape our course so as to avoid the Gulf stream, which, as we advance to the south, increases in its velocity. In seasons when ice is to be expected, our course is more to the south as we approach the Bank of Newfoundland. The usual months for meeting the ice are April, May, and June, but in some years it has been seen as early as February and as late as August. In 1854 it was seen as late as November, in lat. 48°, long. 48° 20' W.; this was, however, north of the route. In 1856 it was seen in every month. What is called the southern passage is recommended by some, in the winter season, as a pleasant route where boisterous weather is not common; but this term is sometimes used in contradistinction to the route north of the Gulf stream, and by others as going as far south as the trade winds. Our impression is that a route passing south of the Azores and island of Bermuda is the true southern passage. This, for vessels bound to ports south of Cape Hatteras, is to be preferred at any season. We once made a passage south of the Azores, crossing the Gulf stream a little north of Cape Hatteras, were blown off the coast, and recrossed the stream, notwithstanding which we arrived in New York several days previous to vessels which sailed with us, or even 10 days before. Our passage was a pleasant one; to those who went north it was otherwise. Steamers from Europe to northern ports take the most direct route, passing near Cape Race. The following table exhibits the average passages of packets, during a period of 8 years, between New York and Liverpool, in days and hours:

Months.	To Liverpool.	To N. York.	Months.	To Liverpool.	To N. York.
January,	29 12	41 08	July,	24 14	34 11
February,	28 02	37 08	August,	25 08	36 01
March,	25 11	30 18	September,	27 00	33 13
April,	28 16	34 05	October,	23 10	31 15
May,	28 00	39 17	November,	22 12	31 18
June,	29 00	34 11	December,	23 05	37 22

By steam, we have the following results from the American steamers of the Collins' line, from April, 1850, to March, 1857:

TO LIVERPOOL.				
Months.	No. Pass.	Average.	Longest.	Shortest.
January,	13	D. H. M. 11 12 04	D. H. M. 18 08 06	D. H. M. 10 12 25
February,	9	11 01 47	11 18 15	9 11 35
March,	11	11 30 08	12 21 15	10 11 30
April,	14	11 10 50	12 08 15	10 06 50
May,	11	10 17 08	12 19 45	9 20 25
June,	11	10 11 09	11 06 34	10 02 45
July,	11	10 12 05	11 09 15	10 01 15
August,	13	10 18 23	11 13 14	9 21 15
September,	12	10 30 04	12 16 15	10 02 45
October,	14	10 17 52	11 07 15	9 19 45
November,	13	11 11 00	12 06 18	10 06 45
December,	10	11 12 05	12 05 15	9 11 35

TO NEW YORK.

Months.	No. Pass.	Average.	Longest.	Shortest.
January,	12	D. H. M. 14 06 27	D. H. M. 16 11 15	D. H. M. 11 08 00
February,	12	12 01 40	12 08 00	11 05 04
March,	11	12 11 28	12 25 45	11 04 30
April,	9	11 18 46	12 16 00	10 01 50
May,	11	11 07 51	12 09 24	10 01 45
June,	14	11 01 10	11 19 45	9 18 25
July,	12	11 07 55	12 08 45	10 08 12
August,	10	10 23 25	12 19 00	9 19 45
September,	12	11 18 28	14 01 45	10 04 15
October,	14	12 02 08	13 17 22	10 19 45
November,	12	12 08 26	14 12 15	10 20 25
December,	12	12 18 48	17 20 15	11 08 15

The results by the English steamers for 1854 are:

TO LIVERPOOL.			TO NEW YORK.	
Vessel.	No. Pass.	Average.	No. Pass.	Average.
Asia.....	8	D. H. M. 11 14 58	8	D. H. M. 12 08 50
Africa.....	8	11 08 22	8	12 01 45
Perla.....	7	9 19 51	7	11 07 05
Europe.....	9	11 04 50	9	12 07 25
Arabia.....	1	9 23 54	1	12 04 10
Shortest....		9 01 49		10 01 25

The route from ports on the Atlantic coast of North America, for sailing vessels bound to the N. W. part of Cuba or the Gulf of Mexico, is by way of the Hole in the Wall, the southern point of Abaco. If the draught of water does not exceed 12 feet, on passing the Hole in the Wall, the passage is made over the Great Bahama Bank, passing usually to the south of the Orange Keys; but with a greater draught of water, the edge of the bank is followed, passing to the north, around the Great Isaacs, to the lat. of 24° 40'. When you leave the bank, keep on the southern edge of the Gulf stream until you are fairly within the Gulf of Mexico, or until you are enabled to steer for your port. Steamers from New York do not go by way of the Hole in the Wall, but on the N. W. edge of the Little Bahama Bank, coasting the western edge of this and the Great Bahama Bank, to the south of the Orange Keys. The Charleston steamers for Havana take the inside passage, west of the Gulf stream, stopping at Key West. All vessels from the Gulf of Mexico, or ports contiguous thereto, bound either to the Atlantic coasts of America or Europe, pass out through the straits of Florida, and keep within the Gulf stream as far as their destination will justify. Steamers can pass through the Yucatan passage into the Caribbean sea, but it requires a fast-sailing vessel, keeping well to the Cuban shore, to succeed. In the season of northers this passage is frequently chosen by vessels bound to Jamaica. Sailing vessels bound from the Atlantic ports in North America to the Caribbean sea, or to the lesser Antilles, enter the former, or approach the latter, by such of the various passages as will enable them to reach their ports of destination without beating up against the trade winds; and on

their return voyages proceed north, through the most available passage, in order to pass out of the region of these winds, never contending against them if it can be avoided. If from Jamaica or the western part of the Caribbean sea, bound either to Europe or the Atlantic ports of North America, and you cannot pass out of the windward passage, you must go out through the Yucatan passage, and the straits of Florida. Steamers from New York for Aspinwall pass through the Crooked Island passage, and between Cuba and St. Domingo, or Hayti, returning the same way, unless they wish to stop at Havana. The average voyage out is 10 days, stopping at Kingston, and about 8 days on the return. Vessels from Europe to the Gulf of Mexico and Caribbean sea take advantage of the N. E. trade winds, and enter the latter generally between Guadeloupe and Antigua, unless bound to the Spanish main, when they pass between St. Lucia and St. Vincent. On the return voyage, if from the lesser Antilles, the passage between Guadeloupe and Montserrat is to be preferred. The following table gives the average of passages made by sailing vessels to the Gulf of Mexico and Caribbean sea :

New York to Havana,	12 days; return, 9 days.	
" to N. Orleans,	15 "	18 "
" to Vera Cruz,	22 "	24 "
" to Carthagena,	17 1/2 "	20 1/2 "
Brest to San Domingo,	46 "	50 "
" to Martinique,	30 "	32 "
Havre to Vera Cruz,	40 "	42 "
" to New York,	25 "	28 "
Cádiz to Havana,	30 "	32 "

In sailing from the United States to Rio de Janeiro, until the introduction of lunar observations, and afterward of chronometers, into general use, it was customary for vessels to cross the equator as far to the east as long. 20° W.; but as the means of determining the longitude with accuracy increased, the dread of falling to leeward was not felt, and as vessels crossed more to the westward, shorter passages were made. As early as 1826 they crossed in the longitude of 30°, and as navigators did not conceal their experience, others availed themselves of it. Improvements in the model of ships, and an anxiety to surpass our predecessors, have carried us on to be more adventurous, and some have gone too far west. Shorter passages are more common than formerly, here as elsewhere, and it is arrogant for any one to say that it is owing to any merit of his own. Vessels sailing from the United States to Brazil, from December to June, should endeavor to reach the longitude of 45° W. on an E. S. E. course before hauling to the south, and then a direct course can be made so as to cross the equator in long. 30° W. The N. E. trade winds are variable and irregular, varying from E. N. E. to E. S. E., but after gaining the trade winds keep a southerly course without tacking even if you make a little westing, as you will have no difficulty in regaining your position on the southern limits. In the other months it would not be advisable to get in the

calm latitudes to the eastward of Bermuda, and it may be preferable to go to the south of that island, and go on the tack which will give the most southing. In sailing to the Cape of Good Hope, after crossing the equator steer to the southward until you are on the southern edge of the S. E. trade winds, when as the winds favor you make your course more direct. The projections of the tracks on this route show a resemblance to projection of the currents. If bound into the Indian ocean, avoid the Agulhas current as you approach the cape, by keeping well to the south of it. The return route passes near St. Helena—crossing the equator about 25° W., is as direct as you can make it. If bound to Europe you will continue on a N. N. W. route until you pass the latitude of 30° N. When the winds are more favorable for you on this route you pass to the west of the Azores.—CURRENTS. In treating of the currents we cannot do better than select the following passage from Prof. Bache's paper upon the Gulf stream, read before the American geographical and statistical society, January 27, 1856, as our introduction: "The great part which the heat of the sun plays in disturbing the equilibrium of the surface of our globe, is well understood. Whenever he shines upon the surface, the air resting upon it is set in motion; so that the circle of the sun's illumination, as it advances over the earth, is a circle of disturbance." That a current can be produced solely by a moderate wind of long continuance is shown in our rivers and lakes, where the water is driven so as to show a decrease in the depth to windward; and that with a wind of short duration a heaping up of the waters can take place, we have an instance in Lake Nicaragua. This lake is 90 miles in length, extending W. N. W. and E. S. E., and it was noticed by the buccaneers as having an ebb and flow of the tide; but they did not assign any cause for it. We have noticed toward evening on its N. W. shore a rise of about a foot, and a fall at the same time on the opposite end of about 6 inches. This oscillation is owing entirely to the increased strength of the wind blowing from the eastward in the latter part of the day. Such being the effect on a small body of water in so short a period, what must it be, when the action of the wind is continuous for 4,000 miles, on a surface of water whose motion is unobstructed for that distance? This we cannot answer, as we are almost ignorant of the general laws regulating the motions of water; but we can point out where it is heaped up within the influence of the trade winds in the ocean so that the tides are quite small, and in some places there are no lunar tides, but a tide once in 24 hours, varying but little from a certain time of the day, and showing that in the open sea there are oscillations dependent on the varying force of the wind, or perhaps on land and sea breezes.—The equatorial current, that volume of water moving from east to west on our globe, interrupted by continents, and sending off branches

in other directions again to reunite, may be said to commence or more properly to reappear on the west coast of Africa, south of the equator. The action of the trade winds, which blow constantly between the tropics, is the cause of this current, and without doubt its velocity is increased by the rotation of the earth on its axis; for although the motion of the tidal wave does not require a transfer of water at the same rate, and in no case whatever is equal to it, yet as the summit of the tide is always to the eastward of the place assigned by theory, the figure of the ocean is not that of equilibrium, and as the earth turns on its axis cannot attain it, but will constantly have a disposition toward it, which will cause a perpetual current of the waters. This current at its commencement, is about 160 miles in breadth, and flows north-westerly with a velocity of about 25 or 30 miles in 24 hours. It crosses the equator about the meridian of Greenwich, where it comes in contact with the southern edge of the Guinea current flowing in an opposite direction, and having a higher temperature. Here the current flows westerly, and exhibits the phenomenon of two currents flowing adjacent to each other in opposite directions for nearly 1,000 miles, and having a difference of temperature of about 7°. Flowing onward on both sides of the equator, the volume of this current is constantly increased by the accession from the south Atlantic current; and when it reaches the meridian of 22° W., it is said to send off a branch toward the N. W., probably caused by the tidal wave which is felt as far N. as 20°, or perhaps further. At 30° W. its breadth is estimated by some to be 300 miles, but it is probably much more. Here it divides; the southern branch forming the Brazil current. The main branch of the equatorial current now flows W. N. W., and is known as the Guinea current. In connection with currents produced by the N. E. trades it flows into the Caribbean sea at a velocity varying from 1 to 2 miles per hour, and estimating the diameter in the meridian of 65° at 800 miles, we can form some idea of the volume of water that flows continually toward the Gulf of Mexico, where it is said to form "a reservoir for the Gulf stream." The distance from Cape Catouche to Cape St. Antonio is 105 miles, between which points is the Yucatan passage, through which the water flows into the Gulf of Mexico; with the exception of the counter-currents off Cape St. Antonio, at the rate of from 27 to 50 miles in 24 hours. As the set to the S. E. off this cape does not extend over 25 miles from the shore, it is within limits to assume the diameter of this stream at 75 miles; the direction in which it flows being from W. N. W. to N. It is now that it turns westward, and is said to make the circuit of the Gulf of Mexico. We find it with a decreasing rate setting over the Campeche bank and thence into the bay of Campeche, until it nearly ceases. To the N. of Vera Cruz we again meet this current, flowing N. half a mile an hour. N. N. E.

from Vera Cruz, in lat. 22°, it sets N. E. one mile an hour, and in lat. 27° it is found setting N. N. E. with an increased velocity. As we approach the meridian of the Mississippi it flows more easterly, and beyond that the direction is toward the N. W. coast of Cuba until it divides; a small portion passing to the W. of Cape St. Antonio, and the greater to the eastward, forming the Gulf stream.—The average temperature of the water in the Gulf of Mexico and Caribbean sea is higher than that of the ocean in the same latitudes, or even that of the equatorial current at its commencement; and although a high temperature is owing to the great influx of the heated water from the torrid zone, it is undoubtedly increased by the caloric carried to it from the surrounding country, which is very properly called the *Tierra Caliente*. Many anomalies are met with, both as to the strength and direction of the equatorial current, which may be explained as accurate observations accumulate; we have endeavored to give its general direction and rate of flow, and as the Gulf stream may be considered as its continuation, it is next in order, and we will commence with Dr. Franklin's opinion as to its course: "This stream is probably generated by the great accumulation of water on the eastern coast of America between the tropics, by the trade winds, which constantly blow there. It is known that a large stream of water 10 miles broad and only 8 feet deep, has by a strong wind had its water driven to one side and sustained so as to become 6 feet deep, while the windward side was laid dry. This may give some idea of the quantity heaped up on the American coast, and the reason for its running down in a strong current through the islands into the bay of Mexico, and from thence issuing through the Gulf of Florida, and proceeding along the coast to the banks of Newfoundland, when it turns off toward and runs down through the western islands." At the time Dr. Franklin wrote, we were without the means we now possess of determining the longitude at sea, and but few observations had been made on the currents of the ocean; nevertheless, what he stated as probable is now confirmed. The trade winds do give "the Gulf stream its initial velocity," and although other forces may operate to change its direction after leaving its narrow channel, yet the northing on our coast is owing entirely to the "heaped up" waters escaping through the straits of Florida. Doctor Franklin appears to have been the first who made the attempt to delineate this stream on a chart for the benefit of navigators. About 1769-70, complaint was made by the board of customs at Boston to the lords of the treasury in London, "that the packets between Falmouth and New York were generally a fortnight longer in their passages than the merchant trips from London to Rhode Island," and proposing instead of New York that for the future they should be ordered to Newport. Dr. Franklin being then connected with the American Post-

office, was consulted on the occasion. He could not understand why there should be such a difference, especially as merchant ships were more deeply laden than packets, and the distance from London was greater than from Falmouth; and thinking there must be some mistake or misrepresentation, he communicated the affair to a Nantucket captain of his acquaintance, who told him "he believed the fact to be true, but the difference was owing to this, that the Rhode Island captains were acquainted with the Gulf stream, while those of the English packets were not; that they had spoken them when they were in the stream, and informed them that they were stemming a current that was against them to the value of 3 miles an hour, and advised them to cross and get out of it; but they were too wise to be counselled by simple American fishermen." At Dr. Franklin's request, he marked out this current. It was engraved and sent to the captains of the packets, who alighted it. Dr. Franklin observed that the water of the stream was warmer than that of the ocean on either side of it, and introduced the use of the thermometer in navigation, and so great was the interest taken in it by Col. Jonathan Williams, that he published a treatise on thermometrical navigation. The use of this instrument in ascertaining when the Gulf stream was crossed, and as an auxiliary in determining the position of the vessel, was of great importance, until chronometers came into general use. The importance of a systematic examination into the temperature, direction, velocity, and other peculiarities of this stream, determined Prof. Bache, superintendent of the U. S. coast survey, to direct the attention of the officers of the hydrographic parties to it. Their results are exceedingly interesting, and when reduced to form, will be published. In the mean time, we are indebted to Prof. Bache for the information furnished in his reports, and in the paper referred to in our introduction. The duty of these officers was arduous and hazardous. Lieutenant-commanding Geo. M. Bache was swept from the deck of his vessel, with 10 of his men, and lost. To him we owe the discovery of the "cold wall" on the inner side, and the "intensive cold water in the midst of the hot water of the Gulf stream." It is not settled as to where the beginning of the Gulf stream is. They say, "it has its origin in the Gulf of Mexico." South of the Tortugas, the stream flows to the eastward, gradually increasing its velocity as it moves on. Opposite Havana, where its diameter is about 70 miles, its rate is 3 miles an hour, in the centre, decreasing on each side; N. W. from Elbow Key, where the diameter is about 47 miles, the set, in the centre, is N. E. 3 miles an hour, with an increased rate toward the Florida reefs. The stream now bends to the northward, and in the straits between Cape Florida and the Bemini islands its velocity varies from 3 to 5 miles an hour. This is the narrowest part of the

stream, it being only 25 miles in width, and here the maximum temperature is 85°. The mean temperature may perhaps exceed that of the Gulf of Mexico, as the warm waters of the latter would naturally be collected together at the surface, as the passage becomes narrow. The examination of this section by Lieutenant Craven, U. S. N., on coast survey service, makes it exceedingly interesting. He found no greater depth than 370 fathoms there, also a temperature of 85° at that depth, showing the existence of a polar current as far south as lat. 25½° N. The "cold wall," in this section, is within 10 miles of the shore. Passing the straits, the axis of the stream has a northerly set, until it passes Cape Canaveral, when it bends gradually to the eastward, running somewhat parallel with the general direction of the coast, but as it approaches Cape Hatteras, it bends so as to flow within 50 miles of the cape, nearly N. N. E., at about 2 miles per hour, after which it turns easterly, and in lat. 38° it runs with a velocity of between 1 and 2 miles an hour. The western edge of the stream bends well into the bight north of Cape Canaveral, and runs within a short distance of Cape Hatteras, when it again recedes from the axis. The bending of the axis and stream here is probably owing to the progress of the tidal wave. As this stream comes out from the straits it has a blue tinge, which can be traced for upward of 100 miles. The separation can easily be seen by the eye between it and the waters of the Atlantic. The temperature, although above that of the ocean at all seasons, in the winter is 20° and sometimes 30° above that of the waters of the ocean between Cape Hatteras and the Grand Bank of Newfoundland. Cooling, as it flows easterly, it has a high temperature when it turns to the southward. The examination of the Gulf stream by the officers of the coast survey has not extended beyond the section S. E. of Nantucket, by Lieutenant Davis in 1845. The subjoined table exhibits the distance on each section of the "cold wall" from the shore, and the width of the several bands of warm and cold water measured on the lines of the sections:

Section.	Distance of cold wall from shore.	First Maximum, or Hot Band.	Second Minimum, or Cold Band.	Second Maximum, or Warm Band.	Width of the three Bands of Gulf Stream.	Third Minimum.	Third Maximum.	Fourth Minimum.
Bandy Hook,	235	60	40	50	150	75	Indef.	
Cape May,	187	50	37	45	129	75	70	
Cape Henry,	100	50	35	50	135	65	75	
Cape Hatteras,	85	50	30	50	130	50	60	
Cape Fear,	65	30	17	40	87	25	55	
Charleston,	70	25	10	35	70	25	55	
St. Simon's,	90	25	10	30	65	30	35	
St. Augustine,	75	25			50	30		
Cape Canaveral,	25	40			40	10		
Cape Florida,	10	25			25	5		

"They present a width of Gulf stream proper

of from 25 miles at Cape Florida, to 150 miles at Sandy Hook; and of warm water (at, say 15 fathoms) of from 80 to 800 miles wide. These principal divisions of the Gulf stream as we pass southward, increase in their definiteness, and are limited to smaller spaces." The axis is the warmer, and the temperature falls gradually on the outside, but rapidly toward the "cold wall." From the discoveries of Lieuts. Maffit and Craven, the cold bands appear to be produced by the shape of the bottom of the sea. In the sections of Charleston and Cape Canaveral, they found two ridges or ranges of hills running parallel with the coast, and it is nearly over the top of these that the first and second cold bands were found. One of these ranges has been traced as far north as Cape Lookout by Commander Sands, U. S. N., on coast survey service. The discovery of the cold bands, and also of the cause of their existence, was so unexpected that it is puerile for any one to say, "I predicted it would be so years ago." The connection between them is this: the polar current flowing toward the equator under the warm water will, by the increasing rotative velocity of the earth's surface, have a tendency westward, and being resisted by inequalities at the bottom, will be forced upward toward the surface, hence these bands and the "cold wall." In the former it is only a change in the temperature and velocity of the stream, while in the latter the polar current shows itself on the surface, its course being regulated by the general direction of the slopes with which it comes in contact, and it will confine the warm water flowing in a contrary direction firmly below, but allowing it at times to overlie it.—For the continuation of the Gulf stream to the eastward of the coast survey examination we are in want of definite information. Rennell's investigation of the currents of the Atlantic ocean, published in 1832, which were mostly confined to the surface, is the best we have. The northern edge crosses the southern part of the Bank of Newfoundland, in about lat. 43° N. in the month of May, and later in the season about 2° further north.—The productions of the tropics have been floated to the shores of Norway, and the western coasts of the British isles; while the warm temperature of the water is traced from the Gulf stream to the N. W. coast of Europe, showing that a large branch passes to the N. E. from the main stream eastward of the meridian of 40°. What should cause this branching off, unless it is the tidal wave, we cannot say; the cotidal lines are at right angles to this branch in this part of the ocean, and the movement of the wave is in the direction of the stream. The following statement of the loss of 2 ships gives us some information as to the velocity and direction of the current before it reaches the grand bank in the centre of the stream:—"Ship Trade Wind, on the 26th of June, at 11.30 P. M., came in contact with the ship Olympus, and both vessels went down in lat. 41° 30', long. 57°. On the 1st of July,

2.30 P. M., the ship Empire took a sailer from the foremast of the Trade Wind, in lat. 42°, long. 55° 30', showing that the mast had drifted 72 miles on a N. 66° E. true course in 101 hours, making $\frac{1}{14}$ of a knot, nearly, an hour." This course, if continued on the arc of a great circle, would strike the coast of France in the deepest part of the bay of Biscay. In this meridian and in lat. 39°, the set is about east, which course if continued as above would pass between the Madeira and Canary islands. But currents cannot move in great circles unless in the plane of the equator. In the northern hemisphere they will incline to the right hand unless obstructed. There is no obstruction to the main body after it passes the Banks of Newfoundland, and the predominating winds are to the north of west on its northern edge, yet it branches off to the N. E. The main stream can be traced to the Azores on its southerly edge, and it reaches the coasts of France, Spain, and Portugal, so expanded and with so diminished a velocity, that we must resort to the track of bottles thrown into the ocean and afterward picked up to ascertain its course.—These show it to be east, to the north of the Azores, and its effects are shown in an increased velocity as it impinges on the coasts. At Cape Finisterre, where it may be said to divide, the northern part forms the Rennell current, and the southern flows along the coast of Portugal. South of the Azores its direction is more southerly; and although it is said to be lost in the Saragossa sea, we can trace its connection with the African and Guinea currents, which last, with its diameter decreasing and an increased velocity, follows the general direction of the coast into the Bight of Benin, where it expands, turns southerly, and is lost in the equatorial current, as it does not cross the equator. The Guinea current varies its diameter according to the season, as also its velocity. In the latitude of the Cape Verd islands its temperature is below that of the ocean, while to the south in the gulf of Guinea it is higher than that of the equatorial current flowing in contact, and flowing in a contrary direction, and evidently receiving its supply from a cooler region. Its diameter south of Cape Palmas is about 150 miles, and its velocity nearly 2 miles an hour. We have now completed the circuit of the great surface-current of the north Atlantic ocean. Within this circuit we have the Saragossa sea, which so much disturbed the crews of Columbus' vessels on his first voyage. It is not now as Columbus found it, covered with fields of floating weeds—*Juncus natans*—but in less profusion they are found scattered in small patches within this space. It was not known for a long while whence this plant originally came, until it was found growing among the Andros islands by Commander Barnett, R. N. The forces which produce this current are: 1, the trade winds; 2, change in the rotative velocity of the earth in the different parallels of latitude; 3, the prevalence of westerly and

northerly winds on the coasts of Portugal and Africa. The change in the direction of the current is owing: 1, to the direction of the coasts against which it impinges; 2, the rotation of the earth on its axis; 3, the progress of the tidal wave; 4, the prevailing winds.—The *Rennell Current*, so called after Major Rennell, who first discovered its course, has an easterly direction off Cape Finisterre, flows along the north coast of Spain and the west coast of France, and may be said to cross the entrance of both the English and Irish channels, sending a branch into the latter. It is variable in its velocity and direction, more particularly as it leaves the Bay of Biscay.—The *Brasil Current*. This we have spoken of as a branch of the equatorial current. It commences about 6° S., and flows along the east coast of South America as far as Cape Frio, when it divides; a small branch flowing on toward Cape Horn, and the main branch turning eastward forms the southern connecting current, or, as it is sometimes called, the cross current of the South Atlantic ocean. This, as it approaches the latitude of the predominating westerly winds, has its velocity increased, and we trace the main body, passing within 150 miles of the Cape of Good Hope, into the Indian Ocean, while a branch turning to the north joins the South Atlantic current.—The *South Atlantic Current*. The Agulhas current flowing continually into the Atlantic ocean, around the Cape of Good Hope, is only one of the branches of the equatorial current of the Indian ocean, and on passing the cape forms the commencement of the South Atlantic current. The temperature at its commencement is higher than that of the Indian ocean, showing that it is not a polar current. This current, in connection with the branch of the southern connecting current, flows along the western coast of Africa until it mixes with the equatorial current. Its general direction is north-westerly, but owing to the prevailing southerly winds along the African coast, a portion of it, called the South African current, follows the direction of the shore to where it blends with the Guinea current, or the commencement of the equatorial current. Both the South African and the Guinea currents are surface currents of moderate depth following the line of the coast; as the winds blow, they meet in the neighborhood of the equator. We have spoken of the surface currents originating in the equatorial regions, and have shown that, both to the north and the south of the equator, circuits are made, by which a portion of the waters are returned from whence they came. It is true that the circumstances are different. There is no reservoir to allow the waters to be heaped up and become heated, or a narrow channel for it to escape in the southern circuit; nevertheless, there is a resemblance.—It has been asked why should not the Gulf stream spread itself out like an immense river, and its waters be immediately lost? We have no im-

mense river, when compared with the volume rushing out through the straits of Florida; but if we had, it would, under the same circumstances, preserve its distinctive character in the ocean in the same manner.—In various parts of the ocean we have surface currents of this class, caused by alternating winds. Our limits will not allow us to treat of them, but they are the most dangerous to navigators of any. We have known them to set for a long period in a particular direction, and then turn, flowing a contrary way. Polar currents are those flowing continually from the polar regions toward the equator, to restore the equilibrium, which is constantly being disturbed by evaporation, changes in the density of the waters, and by the flowing off of the warmer or surface currents.—If the view of Prof. Dove is correct, "that isothermal lines of mean annual temperature enclose one connected space of greatest cold, stretching from Melville island toward Icy Cape, but without reaching the latter, or touching the pole," the cause of the flowing of the Arctic current south, through Davis's straits, and along the east coast of Greenland, as a surface current, is explained, as this neighborhood becomes the area of disturbance in the Arctic circle. The ice, with the waters in contact with it, are of less specific gravity than that below the surface, and the former, as accumulation takes place, driven south by the centrifugal force caused by the earth's diurnal motion, flow out through the most direct channel, viz., Davis's strait, and by the way of the east coast of Greenland. This current flows from the frozen regions, one branch descending along the east coast of Greenland, and the other coming down through Davis's strait, along the coast of Labrador, is improperly called the Hudson Bay current; they unite at the mouth of the straits, forming one current, which flows south, a small branch flowing through the straits of Belle Isle, carrying its waters into and mixing them with those of the gulf of St. Lawrence, while the main stream continues along the coast of Newfoundland, until it comes in contact with the Gulf stream. Here, as a surface current, it flows along the American coast, and as an under current it continues on, carrying into the middle of the stream, itself, immense icebergs, there to be dissolved by the waters coming from the tropics.—The following remarks from the pen of the late Wm. O. Redfield, written in 1887, cannot be improved, even at this date. They were not speculations: "It appears, from observations found on the pages of the Coast Pilot, that immediately contiguous to the borders of the Gulf stream, on the coast of the United States, a moderate current is generally found setting to the southward and westward, or in the direction which is opposite to the stream and parallel to the American coast. By a familiar association, this is usually called an eddy current; but we shall probably find, on more particular inquiry, that it has little or no claim to this character.

An eddy, as is well known, is usually caused by some fixed obstacle opposed to a stream, and exhibits a rotary movement. It also derives its waters from the parent stream, and necessarily partakes of the same temperature. I must, therefore, dissent from the views of those persons who refer this current to the eddying action of the Gulf stream, for the following reasons: 1. Because in open sea it nowhere assumes the *form* of an eddy; but, when unobstructed by violent winds, pursues its course toward the south-west parallel to the general direction of the coast. 2. Because, on the edge of the Gulf stream on this coast, there are no obstacles presented which could divert the progress of a portion of the stream, or circumscribe the same in eddies. 3. Because, if this current was derived from the Gulf stream, it must necessarily partake of its temperature as above suggested; but the sudden reduction of temperature on leaving the margin of the Gulf stream is most remarkable, and is almost unparalleled, except in the immediate vicinity of ice. We shall in vain attempt to explain this extraordinary change of temperature by the proximity of shallows or soundings, for this cannot avail if the water itself be derived from the Gulf stream, to say nothing here of the general unsoundness of this explanation. I have long since become satisfied that the current in question is neither more nor less than a direct continuation of the Polar or Labrador current, which bears southward the great stream of drift ice from Davis's strait, and which, in its progress to the lower latitudes, is kept in constant proximity to the American coast by the same dynamical law or influence which in northern hemispheres causes all currents which pass in a southerly direction to incline to the westward, in consequence of the increasing rotative velocity of the earth's surface in the opposite direction, as in the case of the trade winds in the lower latitudes. In collating the observations of various navigators, we find reason to conclude that, in ordinary states of weather, this current may be traced from the coast of Newfoundland to Cape Hatteras, and perhaps to Florida, the reflux influence which sometimes follows a violent gale, being of short duration." According to this view of the case, the Gulf stream, in its course from Florida to the Banks of Newfoundland, is in part embedded upon a colder current, which is setting in the opposite direction in its progress from the polar regions. The impulses by which the opposite currents are maintained being as permanent and unchanging as the diurnal rotation of the planet, their opposite courses on this coast, while in contact with each other, are no more surprising or inexplicable than those of 2 opposite currents of atmosphere moving in the same manner; and the latter are often known to maintain opposite courses for a long period, and at high velocities. The drift ice from the polar basin is all found in the western portion of the Arctic and north At-

lantic oceans, notwithstanding the influence of violent westerly winds. A writer in the London "Nautical Magazine" supposes that a portion of the polar current, after bearing the ice along the eastern edge of the grand bank into the Atlantic, there becomes exhausted or joins the Florida stream. By its action the great stream of ice is undoubtedly brought thus within the dissolving influence of the Gulf stream, and the grand bank itself perhaps owes its origin to the deposits which have resulted from this process during a long course of ages. But this portion of the polar current probably joins the Gulf stream in no other manner than by intruding upon and passing under the same, the order of superposition being determined by the diversity of temperature, or by the deeper position of the polar stream. The icebergs being thus carried southward by the deeper polar current, their rapid destruction is here effected by the water of the Gulf stream, and we are thus relieved from these dangerous obstructions which would otherwise be found in the lower latitudes of the Atlantic. These two streams of current therefore do not coalesce in any proper sense, but like other currents, both atmospheric and aqueous, pursue each its determinate course, the Gulf stream being thrown eastward by the greater velocity which it acquired in latitudes nearer the equator, and the polar current being thrown westward, along the shoals and soundings of the American continent and its contiguous ocean depths, by the slower rotation which it derived in higher latitudes. The writer above alluded to, supposes the natural course of the polar current from Davis's strait to be toward the coast of Morocco in north Africa; but a little attention to the effect of the earth's rotation on this current will show that both it and the ice-drifts that are borne on its surface must be turned westward, as here described, in spite of the powerful westerly gales which prevail in these latitudes. Light articles, like bottles, however, which are set afloat to determine the drift of currents, will not only yield greatly to the influence of these winds, but falling into the surface current of the Gulf stream, will of course accompany that current in its progress to the coast of Europe, where a leading branch of this stream is found penetrating the polar sea along the coast of Norway, and appears to be ultimately resolved into the polar current. The south-easterly branch of the warm stream assumes the shorter and more direct circuit of gravitation by the coast of north Africa to the tropical latitudes, from whence it again merges in the Florida stream. It is by this system of compensation, aided by various subordinate circuits, such, for instance, as Rennell's current, that the great mechanical system of oceanic circulation is apparently maintained; and were the influence of winds wholly unfelt upon the ocean, it is probable that the same system would still be maintained in all its essential features by the mechanical influences of the earth's rotation, combined

with the tides and a state of unstable equilibrium. Of that reciprocating movement of the ocean waters called under-currents, we know but little. In Baffin's bay we find them floating contrary to the surface-current, carrying immense icebergs through the surface ice with inconceivable velocity. And in various parts of the more temperate regions, we find them flowing mostly toward the equator. The following we select from several instances contained in the report of Lieut. Walsh, U. S. N., commanding the U. S. schooner Taney, to Lieut. Maury: "The surface-current was first tried by the usual mode (a heavy iron kettle being lowered from a boat to the depth of 80 fathoms); then, for the trial of the under-current, a large chip-log, of the usual quadrantal form, the arc of it measuring full four feet, and heavily loaded with lead, to make it sink and keep upright, was lowered by a light but strong cod-line to the depth of 126 fathoms (the length of the line); a barrega was attached as a float, a log line fastened to this barrega, and the rate of motion of this float as measured by this log line and the glass, and the direction, as shown by a compass, were assumed as the velocity and set of the under-current. No allowance was made for the drag of the barrega, which was always in a different direction from the surface-current. It was wonderful indeed to see this barrega move off against the wind and sea and surface-current, at the rate of over one knot an hour, as was generally the case, and on one occasion as much as $1\frac{3}{4}$ knot. The men in the boat could not repress exclamations of surprise, for it really appeared as if some monster of the deep had hold of the weight below, and was walking off with it. I will cite from the log several instances of these experiments. On May 11, in lat. $24^{\circ} 48' N.$, long. $65^{\circ} 25' W.$, we found a surface-current of $\frac{1}{2}$ knot per hour, setting to the west, and an under-current at the depth of 126 fathoms, of 1 knot, setting W. S. W., temperature of water at surface, 77.3° , at 50 fathoms, 77.5° , at 100 fathoms, 78.5° . The current felt by the vessel on that day (as deduced from the comparison of the true positions obtained by astronomical observations and chronometers, with those of the dead reckoning) agreed with this trial of the surface-current, being the same within a fraction, viz., 0.8 knot, westerly. On this day the sea was covered with a species of medusæ of a dark red color, spherical in shape, from $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter. On May 12, at 4 P. M., in lat. $25^{\circ} 55' N.$, long. $64^{\circ} 48' W.$, the surface-current was found to be $\frac{1}{2}$ knot, setting N. N. E., and the under-current (at 126 fathoms) $1\frac{1}{2}$ knot, setting S. E., being the strong under-current I have alluded to: this was well ascertained by several trials—temperature of water at surface, 75° , at 50 fathoms 76° , at 100 fathoms, 69° . From this time, 4 P. M. to 8 A. M., the following morning, we experienced a strong current of 1.3 knot per hour, setting N. $14^{\circ} E.$, as determined by the observations. While trying the currents in

the boat, all hands remaining on board the schooner were employed sounding with 500 fathoms line, but failed to get the temperature at that depth, there being at the time too much swell."—To the "Physical Geography of the Sea," by Lieut. Maury, we are indebted for much information. We find facts stated there which are not found elsewhere. Although we may not always agree to the inferences drawn, we are indebted to him for the best delineation of soundings in the blue water of the North Atlantic ocean, as the expeditions for that purpose were first planned by him. These depths are not as accurate as could be wished, on account of the methods at first used in sounding,—these have been improved, and a short history of deep-sea soundings is exceedingly interesting. Capt. Ross, R. N., in 1818, sounded in 1,050 fathoms, using a $2\frac{1}{2}$ inch whale line, with a weight of upward of 100 pounds. This weight was 27 minutes in descending, and it required an hour to haul it in. It was considered a tedious method, and other plans tried by the English, French, and Dutch, using silk thread, twine, and also the common lead line. These attempts failed, as the shock could not be felt on the lead striking the bottom, owing to the insufficiency of the weight, stray-line and under-currents—34,000, 39,000, and 50,000 feet were tried without success by officers in the U. S. N.; and although Capt. Denham, of H. B. M. ship *Herald*, reported bottom in the South Atlantic at the depth of 46,000 feet, we do not consider his success as any evidence of the depth, or the line run out by others as a failure in reaching bottom. We wanted to see the bottom, and thus know that the messenger had performed its duty. An ingenious arrangement by Passed midshipman Brooke, U. S. N., detaching the weight on its reaching the bottom, and allowing the line to be drawn up with a rod, the foot of which was armed with tallow or with the barrel of a common quill attached to it, furnished this, but we wanted something more—we wanted the perpendicular distance. The plan adopted in the U. S. N. until the voyage of the *Arctic* in 1856, was using twine, made expressly for the purpose, sufficiently strong to sustain a weight of at least sixty pounds in the open air—a cannon ball of 32 or 68 pounds weight was appended to it, and on being thrown overboard, was allowed to take the line freely from a reel. The line was divided into 100 fathom marks, and the time noted as they successively went out. This furnished an average time of descent at different depths, and was sufficiently accurate to show that the depth of the ocean had been overrated. These soundings were made from a boat, so as to enable the men with their oars to keep in such a position that the line should be perpendicular. The timing the line as it goes out and ascertaining the "law of descent," is, after all, but a check on your operations in giving the time nearly when the line ceases to flow out according to that law of descent; for currents will act on the line more or less, and cause it to sway in the bight, so that

the law of average time of descent is no law after all that can be read, and one would be at a loss to know whether to depend upon the time or the length indicated on the line, to ascertain the depth. It would perhaps be useful if the actual depth was first ascertained in very deep water with Massey's sounding machine, to ascertain the law of descent; so that those not furnished with any better mode, could sound; but it would be necessary to have a uniform standard for the figure of the weight and also for the line. The weight should not be a sphere, on account of the greater resistance experienced by that form.—The plan for deep-sea soundings adopted by the Arctic, in 1856, was as follows: The Arctic was fitted with a steam reel, worked by two oscillating cylinders; the whole engine and reel weighing about 2,700 pounds. The reel carried about ten thousand fathoms of deep-sea line. The sounding line was passed through two leading blocks; the first hooked to a pendant from the foremast head, on either side, about half way down. There was another hooked to the head of an iron davit, used instead of a cat-head, and made to shift from one side to the other. The main dependence for vertical depth was on Massey's patent sounding apparatus. Every opportunity which occurred, was taken advantage of to compare the line (which was marked in the ordinary way) with the indicator, and this was done in the Arctic sufficiently often to justify great confidence in its accuracy. In one experiment in 2,070 fathoms water, only 2,150 fathoms were used, and if the line had been stopped a little sooner, it was clear that an entire correspondence might have been obtained; but it is entirely out of the question to suppose that the exact time can be ascertained when the weight strikes the bottom. By taking the exact time of descent of each hundred fathoms, some approximation may be arrived at, but under-currents may occur, and other impediments—rain squalls may intervene at night, so as to prevent the possibility of getting the exact elapsed time. The plan of allowing the line to run until it was certain that enough was out to reach bottom, was preferred, and then reeling up, very slowly at first, gradually increasing the revolutions of the reel as the lead approached the surface. The self-detaching apparatus of Lient. Brooke, U. S. N., with a lead of about 100 to 150 pounds weight, about 2½ feet long, of a conical form, with its greatest diameter 4 inches from the lower end, tapering thence to the upper end, to 2, was used. This lead had a hole 1 inch in diameter through its whole length, to allow an iron shaft to pass through. The shaft had a hole in the lower end, 2 inches deep, and sufficiently large to admit 4 or 5 common quill barrels with their ends cut off. These quills received the specimens of the bottom when the end of the lead or shaft plunged into it. The upper end of the shaft had Massey's patent apparatus on it. After a dozen deep-sea casts had been made, the line was apt to break when reeling it up again. In all these cases new

line was got up, bent on and marked; and the operation persevered in, until finally successful. In very pleasant weather, two hours were sufficient for a cast of 2,000 fathoms, and the time of the descent of the lead was not much greater than that of hauling it up again. Ten thousand fathoms of deep-sea line lasted from the Banks of Newfoundland to the banks of the Irish coast, and the time occupied was 23 days. The distance between the positions occupied, varied from 20 to 100 miles—the deeper water having the larger. The Massey's indicator or sounding apparatus was increased to 21,000 fathoms by Mr. Saxton, of the coast survey office, and did not need to be turned back until nearly arrived at its highest numbers. The engine working the reel, was driven by steam from the main boiler, and was placed just forward of the smoke-stack, the reel being placed across the deck. The power of the engine was sufficient to give five hundred revolutions per minute to the reel. The officer in charge was very cautious in manœuvring the vessel, and keeping the engineer promptly advised of slowing, stopping, and starting ahead the engine, so that the line could descend as nearly perpendicular as possible. The deep-sea soundings and low temperature of the ocean, at great depths, obtained by Lient. Berryman, commanding the steamer Arctic in 1857, are very interesting, and the latter may be considered as one of the greatest discoveries in physical geography. These were a continuation of the Gulf stream observations, under the direction of Prof. Bacha. Lieutenant Berryman sailed from New York July 11, and the first deep-sea sounding obtained was 747 fathoms. This was in the Gulf stream, about 70 miles S. E. of Nantucket. Saxton's thermometer in this place indicated a temperature of 19° at the depth of 450 fathoms. E. 17° S. from this about 30 miles, bottom was found in 1,005 fathoms; the temperature at that depth being 20°, and N. 40° E. from this, bottom was reached with 755 fathoms, the temperature being 33°. Thence the soundings were continued to the eastward in the Gulf stream, the depth soon increasing to 1,075 fathoms, then gradually to 1,441 fathoms, in the meridian of Cape Sable, when it decreased until he had reached the northern edge of the Gulf stream, in the longitude of Halifax, where he found 1,076 fathoms. There one of the thermometers indicated 10° and the other 30° of temperature. Eastward of this the soundings were north of the stream, increasing but little until he reached the meridian of Sable island, S. E. from which, in lat. 45° 18', long. 59° 28', he sounded in 1,464 fathoms, using two thermometers, one of which showed a temperature of 22°, the other 8°. This was about midway between the Gulf stream and Sable island; soon after this the line parted while reeling in. In Oct., Lient. B. commenced the examination of the section of the Gulf stream between Halifax and Bermuda. In lat. 42° 44' N., long. 63° 35' W., he found 175 fath-

oms. The next successful cast was in lat. 42° 28' N., long. 63° 14' W., 910 fathoms. He had not then reached the Gulf stream, and as he continued on, the depth increased until he reached the parallel of 40°, when he found bottom at the depth of 2,987 fathoms, nearly 3½ miles. The experiments for temperature at various depths, here gave at 250 fathoms 71°; at 500, 43°; at 1,000, 36°; and at 2,987 fathoms, 20°. The next cast was in lat. 39° 13' N. long., 63° 57' W., where he found 2,882 fathoms and a temperature of 25°. The next attempt to sound was unsuccessful, the line parting at 3,600 fathoms bottom, on commencing to reel in, losing every thing; and on making another trial by attaching the wire line to the hempen, it again parted while reeling in, losing 1,630 fathoms of wire, and 1,630 of hempen line, one Saxton's thermometer, and one Massey's sounding machine. Lieut. Berryman had nearly reached the southern edge of the Gulf stream at this time, and in consequence of these accidents was obliged to give up the examination. The apparatus for sounding was somewhat improved from that used on the former voyage. Massey's machine was attached so that the turning or twist of the line in descending could not affect the register, and Brooks's plan for detaching the weight on striking bottom was applied to a lead having a form of less resistance than that of a sphere. The self-registering thermometer of Mr. Saxton was always used. These instruments were prepared at the coast survey office expressly for registering submarine temperatures, and being submitted to tests before leaving the office, were found to be accurate. The temperature is ascertained by the expansion and contraction of two thin pieces of metal, silver, and platina, soldered together, and afterward bent into a spiral form, a register being attached so as to record the lowest degree of temperature reached. It has been suggested that the immense pressure to which these delicate thermometers were subjected when at great depth might be the cause of error, but we do not think it could cause them to record a lower temperature. At any rate, we feel satisfied that the anomalies shown in some of the results are entirely owing to the sudden check of the momentum of the instrument when descending, or to some blow which causes the index to change its place. Two of these thermometers were some time used with a view to testing them. On one occasion they gave 11° and 11½°; the next, both read 10°; the next, 9° and 9½°; and on the next the difference was 4°, an agreement remarkable, considering the rough usage they are subjected to.—The result of all these soundings indicates less depth than was supposed from calculation or from former soundings. The greatest depth, as shown on the chart, appears to be in a space on the southern part of the Gulf stream, from long. 67° W. curving toward the north to lat. 41° and long. 49° (S. E. of the Bank of Newfoundland), then south as far as lat. 33°, when it turns toward the N. W.

and then W. to long. 67°. The soundings here are rather doubtful, the greatest actually obtained was 4,580, and the greatest trial without success, 6,600 fathoms. The soundings by Lieut. Berryman, for the purpose of examining the basin between Newfoundland and Ireland, exhibit a moderate degree of depth, nowhere exceeding 2,070 fathoms, and with the soundings taken by others show that a plateau exists in this basin which extends to the south of the Azores, thence S. W. to lat. 20° N., and then N. W. to within 420 miles of Bermuda, with less than 2,000 fathoms on it; that while a greater depth is found between this plateau and both continents to the south of the Bank of Newfoundland and the coast of Ireland, there is a regular descent from each of the proposed terminations of the Atlantic submarine telegraph.

ATLANTICA, the name of a work, by a speculative Swede, Olaf Rudbeck, written in Latin and Swedish, wherein the author labors to prove that the Atlantis of the ancients was Scandinavia, and that the Greeks, Romans, and all the Teutonic branches of the European family, originated in Sweden. It was published in 1675-'79.

ATLANTIDES, the children of Atlas, in Greek mythology. The Pleiades had Atlas and Pleione as their parents; the Hyades and Hesperides, Atlas and Æthra.

ATLANTIS, according to the tradition of the Greek geographers, a large island in the Atlantic ocean, to the west of the coast of Africa, and the pillars of Hercules. It was said to possess a numerous population, begotten by Neptune of mortal women. The sea-kings of Atlantis were said to have invaded the west of Europe, and of Africa, and to have been defeated by the Athenians and their allies. To account for its disappearance in later times, when navigators had acquired a positive knowledge of the longitudes where the island Atlantis was supposed to be, the further fiction was elaborated that the inhabitants had become desperately wicked, and the island was swept away by a deluge. Plato mentions this in his *Timæus*, and says that an Egyptian priest told it to Solon. On the old Venetian maps, Atlantis is put to the west of the Azores and Canaries. Of course, many moderns have identified it with America. The "New Atlantis" is an allegorical fiction of Lord Bacon. It is, like the Atlantis of the ancients, an island in mid-Atlantic, where the author is wrecked, and finds there an association for the cultivation of natural science, and the promotion of improvements in the arts.

ATLAS. I. In Greek mythology, son of Japetus and Olymene, and brother of Epimetheus and Prometheus, who made war, with the other Titans, against Zeus, and was condemned to bear heaven on his head and hands. Some stories represent him as a great astronomer, astrologer, and wise demigod, who first taught man that heaven had the form of a globe. Ovid relates that Perseus, the hero, came to

Atlas and asked for shelter. It was refused, whereupon Perseus, by means of the head of Medusa, changed him into Mount Atlas, on which rested the firmament. II. In anatomy, the first vertebra of the neck, so named because it supports the globe of the head. III. A collection of maps, first so called by Mercator, in the 16th century, because the figure of the mythological Atlas was generally drawn on the title-page.

ATLAS, a mountain system which occupies the whole extent of north-western Africa, from Cape Ghir to the gulf of Oabes, or little Syrta. It is divided into the great and little Atlas. The little Atlas is the range nearest the sea-coast; the great is more inland, and borders on the desert. In fact, however, the 2 ranges are one and the same system, though sometimes connected only by separate mountains, or ranges of low hills. On the coast, the range skirts the Mediterranean, from Cape Spartal, and the straits of Gibraltar, to Cape Bon, on the north-east of Tunis. The Atlantic shore is sometimes sandy and low, at other times formed by cliffs, which do not attain any great height, except at Cape Ghir. The Mediterranean shore, between Capes Spartal and Bon, is generally rugged, and in places attains a considerable height. Between Cape Bon and the gulf of Oabes it is rocky, but without reaching any great elevation. The southern slope of the Atlas reaches the great desert, from which it is separated by a region of sand hills, shifting with every strong wind, and gradually making encroachments on the fertile lands at the foot of the mountains. On the west of the gulf of Oabes, Mount Nofusa, the last eastern spur of the Atlas, joins Mount Garian, which extends into the regency of Tripoli. The French geographers include within the limits of the Atlas their own province of Algeria, together with the empire of Morocco, and a part of Tunis. The whole area is 500,000 square miles, including a great variety of surface, mountains, valleys, and extensive plains. The loftiest peaks form a diagonal line, striking across the general course of the mountains from S. W. to N. E. This line begins at Cape Ghir, on the Atlantic, which rises almost perpendicularly from the sea to a great elevation. It then stretches away, E. of the meridian of Morocco, then turns abruptly N. E., and from this quarter 4 important rivers take their rise, the Wady Oum Erbeigh (Morbeys), the Maloovia, the Tafilet, and the Draha. At this precise spot, the loftiest peaks of the whole mass seem to be brought together, and the most elevated chain runs away N. The principal chain traverses a region entirely unknown, called the desert of Anсад, the boundary line between Morocco and Algiers. Here the name great Atlas is first applied. The natives call it Djebel Tedla. The principal chain recurs in Algeria, where its highest part is called Wanashrees, or Warensenis, and terminates on the banks of the Shelliff, whose valley makes a gap in its course. It re-

appears S. W. of Algiers, in the lofty summit of the Jurjura. From this point, the chain follows a direction parallel to the coast, then it dips again to the S. E., and takes the name of the mountains of Wannooga. Further on to the east, we meet it as the Djebel Aurea, and approaching the coast again, it penetrates into the territory of Tunis, under the name of Mount Tipara, terminating at Cape Blanco and Cape Zibeb, on the north of the city of Tunis. The height of these mountains has not been determined. The highest summit, the Miltain, S. E. of the city of Morocco, and other mountains near the Wady Oum Erbeigh, and the Maloovia, are rarely free from snow. Their altitudes probably reach 9,000 to 15,000 feet. The little Atlas is by no means so lofty. The great Atlas is the water-shed of the province. The rivers flowing north from this line force their way through the lesser Atlas to the Mediterranean, while those that take their rise on the southern slope are lost in the marshes of the desert. There are several defiles through the Atlas, the best known of which are those of the Beboonan, leading to Terodant in Morocco, and the Biban, or Iron gate on the east, leading from Algiers to Constantine. The geological constitution of these mountains presents old limestone alternating with a schist, oftentimes passing to a well-characterized micaceous schist, or gneiss. The stratification of the gneiss is also very irregular, only presenting organic debris; then come schistose clays, alternating with secondary limestones; then come limestone with white clays, and iron sands resting on blue clay. This formation is particularly developed near Oran, and the plains in which the soil is formed from it are of great fertility. Volcanic rocks have been found in small quantities. There are veins of iron, copper, and lead. Saltpetre is found near Terodant. About 50 miles from the same town, excellent malleable iron is found. At Elala there are copper and silver mines. The vegetation embraces all the varieties of both temperate and tropical climates. The Atlas was known to the ancients, and the Romans formed several colonies in the district.

ATMOMETER (Gr. *ατμος*, vapor, and *μετρον*, measure), an instrument invented by Leslie for measuring the amount of water evaporated in a certain time. It is not now in use.

ATMOSPHERE (Gr. *ατμος*, vapor, and *σφαηρα*, a sphere), the body of air which surrounds the globe, the gaseous fluid in which we live, and without which life cannot be sustained. So dependent are we upon its purity remaining constant, that even when its composition is slightly changed, our health suffers, or we may indeed instantly perish in consequence. And yet noxious elements are ever pouring into this great reservoir of gaseous exhalations. They come forth from volcanoes in immense volumes; they silently steal upward in the invisible miasmata of marshes; from all decaying bodies they mix their poisonous contaminations with the pure air; and still this ever remains

the same life-supporting element; as in the great salt ocean, there are compensating agents silently working to counteract the effects of the enormous quantities of strange substances introduced, which would otherwise soon destroy its useful qualities.—Air consists essentially of 2 gases, oxygen and nitrogen, in a state of mechanical mixture. But with these are always present a small proportion of carbonic acid gas and aqueous vapor. In the vicinity of large cities ammonia is found, too, in small quantity; and nitric acid is generated in thunderstorms by the chemical combination of nitrogen and oxygen induced by the electrical shock. These, which may be regarded as accidental impurities, are soon dissipated in the great bulk of the atmosphere, or they enter into new combinations, and are precipitated upon the earth, or are washed down by the rain. The proportions of the 2 elements of the air hardly vary—whether this is taken from the summits of the highest mountains, from extensive plains, from thickly populated cities, or from crowded hospitals—nor are they affected by season, climate, or weather. In closely confined places, exposed to putrescent exhalations, the purity of the air is necessarily much affected; the proportion of oxygen diminishes, and mephitic gases, as sulphuretted hydrogen and carbonic acid, are introduced. Prof. Nicol gives an analysis of air collected in a filthy lane in Paris, in which the oxygen constitutes 18.79 per cent. only, instead of 23 per cent., its usual proportion; nitrogen was present to the amount of 81.24 per cent.; carbonic acid, 2.01; and sulphuretted hydrogen, 2.99 per cent. Carbonic acid gas and aqueous vapor are more variable in their proportions; and the former, though found at the highest altitudes, has sometimes escaped detection in air collected at sea. Its ordinary composition is thus given by Brande:

	By measure.	By weight.
Nitrogen.....	77.50	77.55
Oxygen.....	21.00	22.52
Aqueous vapor.....	1.43	1.08
Carbonic acid.....	0.08	0.10
	100.00	100.00

Regnault calculates, from numerous analyses, that it is by measure oxygen 20.90, and nitrogen 79.10; and Prof. Thomson, in the article "Atmosphere," in the "Encyclopædia Britannica," gives as the mean of 10 careful trials a proportion by volume of 79.9785 parts of nitrogen, and 20.0265 of oxygen. The near approach of these 2 gases to the number 80 of the one and 20 of the other, cannot fail to strike the attention of those who study the analyses made by Cavendish, Davy, Gay Lussac, Humboldt, and others. And as a volume of nitrogen is equivalent to one atom, and half a volume of oxygen is equivalent to an atom, the inclination is very strong to consider air as a compound of these gases in the equivalent proportions of 2 atoms of nitrogen and 1 atom of oxygen. But the differences of specific gravity, of temperature, structure, or form, which usually accompany the

change by chemical combination are here wanting; and, moreover, air is recomposed by simple mixture of its elements, with no evidence of any chemical change taking place. The phenomena of refraction are such as indicate a mixture; and a still more conclusive proof is that air held in solution in water does not consist of the same proportions of its elements; but from the greater solubility of oxygen, it contains of this about 32 per cent., and of nitrogen 68 per cent. We are therefore not authorized in the conclusion that air can be otherwise than a mechanical mixture of its elements.—Carbonic acid gas, increased to the proportion of 5 to 6 per cent., renders air unfit for sustaining animal life. A candle ceases to burn when it contains 8 per cent. of this gas. One may live, however, in an atmosphere containing 80 per cent. of it for a short time, but not without suffering. But if carbonic oxide, which has only 1 atom of oxygen, instead of 2 atoms, to 1 of carbon, is present even in the small proportion of 1 per cent., it may prove instantly fatal. This poisonous gas is generated by the combustion of charcoal in confined places. Carbonic acid is generated by combustion of carbonaceous substances, with free access of air, and by the analogous process of the breathing of animals—an atom of carbon unites with 2 atoms of oxygen; and the solid matter takes the form of this invisible gas. By several processes it may be restored to a fixed or tangible shape. Man requires from 212 to 353 cubic feet of air per hour. In breathing, the oxygen in part unites with carbon in the system, and the air expired contains 4½ per cent. of carbonic acid gas. This is immediately dispersed through the atmosphere by the property of diffusibility, possessed in such a remarkable degree by the gases; but if confined in close places, it soon accumulates and contaminates the air. Though this is the heaviest of the gases, and is generated near the surface, it is found in larger proportion in the air of elevated places, than in that below. The reason ascribed, that this is owing to the plants absorbing it in the lower strata, is not satisfactory, as it is in these strata produced.—Growing plants are the compensating agents, that counteract the noxious influences of combustion and the breathing of animals; as in the ocean the coralline insects as quietly perform their great office of separating from the water the soluble contaminating ingredients, poured in from the innumerable rivers that feed it. Plants as well as animals breathe the air, but the effect of this respiration is just the reverse of that of animals. The carbonic acid gas is decomposed in the laboratory of their vessels, the solid carbon is added to their structure, and the pure oxygen is expired. It is true, the process is reversed in the night, but with much less effect. This change in the action of plants at night is the reason why they should not be kept in sleeping apartments.—Oxygen thus appears to be the life-sustaining element of the air for ani-

mals; while nitrogen has the somewhat negative duty of restraining, by its bulky proportions, the too active influence of its fiery partner. Oxygen is diluted with it, as good spirit is with water, to make it wholesome. Both the weaker elements, however, have some other uses, being found as constituents of vegetable and animal substances.—Water, moreover, in the form of vapor, has already been noticed as one of the constituents of the atmosphere. It manifests its presence by condensing in visible moisture and drops upon cold surfaces. When the air is warm, its capacity of holding water is great; as it becomes cool, this capacity diminishes, and the water, that is now in excess, appears as dew, or mist, or rain. The atmosphere is said to be dry, when it has not so much moisture in it as it is capable of holding at its temperature; evaporation then takes place. But let the temperature fall, and the same air, that was called dry, is now damp. The absolute quantity of vapor has not changed, but the relative quantity of what the air is capable of holding, and that actually in it. As the air becomes cool, and reaches a degree at which it is saturated with the water it contains, and this begins to condense upon cold surfaces, this degree of temperature is called the dew-point. If it is high, the absolute quantity of vapor in the air was great; if low, there was little vapor in the air. The relative quantity was the same in both instances, as it always must be at the dew-point. As the hot airs of the tropics are swept over the Atlantic in the trade winds, they suck up moisture like a dry sponge. Saturated with it, as they pass over the snowy summits of the Cordilleras, and their particles are compressed together with the cold, they shed it, like the same sponge squeezed in the hand. Thus does the atmosphere fill its office as a compensating agent, carrying away the excess of waters of the ocean, that, though all the rivers flow into it, it shall never be full—feeding, too, the dry places of the earth, that its wells and springs shall never lack their supplies.—Air being a material substance, though invisible, possesses many of the physical properties of the solid and liquid bodies, as weight, inertia, elasticity, impenetrability, capacity for heat, &c. A vessel exhausted of air is found to weigh less than when filled with it; and in this manner it has been ascertained that 100 cubic inches of pure and dry air, at a temperature of 60°, and under a pressure of 30 inches of the barometer, weigh 81.0117 grains. Other gases are referred to air at this temperature for the expression of their comparative weight. Water is 815 times heavier than air; but at the freezing point the difference is as 770 to 1. From its weight result its inertia and the pressure of the atmosphere. It cannot be set in motion without exertion of force, nor in motion be retarded without opposition of force. Its momentum, as with other bodies, is its weight multiplied by its velocity. Air in motion is a

mechanical force, applied to propelling ships and windmills. The pressure of the atmosphere is the weight of the column of air. If this were alike dense throughout its height, the upper limit of the atmosphere would be easily calculated from the weight of a cubic inch, and the pressure of 14.6 pounds upon the square inch. It would be about 5½ miles. But from the property possessed by the gaseous bodies of expanding in bulk or becoming more rare, in proportion as the force that confines them is removed, the weight of a column of air is not directly proportional to its height. This tendency of the particles of air to separate from each other, as the pressure that confines them is taken off, is called the elasticity of the air. Its effect is, that every successive layer of air of any given thickness is of less density and weight than the layer of the same thickness beneath it. The rate of this decrease of weight may be thus expressed: when the height increases in an arithmetical ratio, the volume increases in a geometrical ratio, and the weight diminishes in the same. For example, at the level of the sea calling the volume 1, and the density or weight 1; at the height of 2,705 miles the volume is 2, and the density ½; at twice the height the volume is 4, and the density ¼; at 3 times the height the volume is 8, and the density ⅛. But notwithstanding this tendency of expansion, the atmosphere is proved by calculations based on its refractive properties to find somewhere a limit, and this appears to be not far from 45 miles above the surface. The pressure of the atmosphere is made apparent by removing the air from any tube, the lower end of which is immersed in water or any other fluid. This fluid will be pressed up the tube to a height corresponding to the pressure upon its surface. If this be at the level of the sea, where the pressure is 14.6 pounds on the square inch, water will rise 33 feet and mercury 29 inches. At any greater elevation, the pressure being less, a less height of the fluid will balance it. Such an instrument as this tube is the barometer, by which the difference of elevation is determined by the different heights of the column of mercury; the calculation being made on the principle above described, and corrected for temperature and the latitude of the place. There is another instrument used for the same purpose, based on the property of water boiling at a less temperature, as the pressure of air upon its surface is taken off. For every 549½ feet increase of elevation, it is found that the boiling point is one degree less. Correction is in this case also to be made for the temperature of the air. Well-constructed instruments of this kind have been made to produce very fair results in experienced hands. Familiar illustrations of the pressure of the air are afforded by the common pump, which is but such a tube as has been already referred to, furnished merely with a clack or valve for lifting out the air, and then the water which follows it. The power applied to lift

the air is equal to its pressure at the place multiplied by the height it is raised, or to the weight of the column of water. There can, therefore, be no expedients that will lessen the power required to work a pump, unless they can present some form more simple, and which involves less friction, than the ordinary form of the pump, and this seems hardly possible. The pressure of the air is also well illustrated by the common leather "sucker," which the boys make for a toy—a mere disk of soft leather, with a string knotted at one end passed through its centre. When moistened and applied to any smooth surface, care being taken to expel the intervening air, it is attracted to it by the external pressure. By the same principle insects walk upon the ceiling, and the patella or limpet, and some other shell fish, hold fast upon the smooth rock. So great is this pressure, that the force exerted upon the body of a moderately sized man is estimated at about 15 tons, sufficient to crush him, as it inevitably would, if applied to only a portion of the body; but quite harmless when pressing with perfect elasticity everywhere alike—from the external parts inwardly, and from those within outward. Let the pressure be taken off from any portion, as by the cupping instrument, and one is immediately sensible of the power that is exerted upon the parts around, painfully pressing them into the vacant space of the instrument.—Elasticity is possessed, in a remarkable degree, by gaseous bodies. If the pressure is removed from them, their particles repel each other, and the tendency is to expand indefinitely. This force, as expressed by the law of Mariotte, its discoverer, varies in exactly the same proportion as the density of the air. But as air has been allowed to expand to more than 2,000 times its usual bulk, and been compressed into less than one-thousandth—and at these extreme degrees of rarefaction and condensation it is difficult to determine its elasticity with rigor—this law may possibly not admit of full application. The effect of the elasticity of air is seen in the unroofing of houses and bursting outward of windows in hurricanes. A partial vacuum being produced by the rotary motion of the hurricane, the air within expands, and lifts off the roof, or bursts open the doors and windows. A similar effect is observed in the expansion of air confined in a bladder, and taken from a low level to a great height. The external pressure being reduced, the air within tends to expand to the same degree of rarity as that without, and with such force as to burst the bladder. It is this property, possessed in the greatest perfection by the gaseous bodies, that renders air so excellent a material for springs, air-beds, air-guns, &c.—The impenetrability of air is its property of preventing another body occupying the space where it is. The diving-bell is a good illustration of it, as also of its elasticity; for when sunk to the depth of 34 feet, the water will be forced in, so as to half fill it; at the depth of 100 feet it will be 3 quarters filled; at

1,000 feet it will be filled to within a thirtieth. On drawing it up, the air will expand and drive out the water.—The capacity of air for heat is shown by its expansion and increased rarity, as it is subjected to the influence of this agent. From the freezing point upward it expands $\frac{1}{273}$ of its bulk for every degree of temperature. This is easily exemplified by heating air confined in a bladder. Its expansion soon swells the bladder and causes it to burst. As its bulk increases, its density or weight diminishes. The colder and heavier air around it presses through it, and the more buoyant fluid is lifted up. On this principle were constructed the first balloons. It is this principle that gives rise to the currents of air or wind, the colder bodies flowing along the surface to fill the spaces left by the ascending columns. Thus the trade winds blow from the temperate regions toward the torrid equatorial belt. The whirling tornado, and all the phenomena of the winds, owe their origin to local heating and rarefaction of the atmosphere. The rays of the sun pass through the upper strata of the atmosphere, imparting to them no heat. This the air receives only near the surface. As we ascend, the temperature diminishes one degree for every 352 feet. Near the equator perpetual snow covers the mountains at the height of 15,207 feet; in latitude 60° it is found at 8,818 feet; and in 75° at 1,016 feet. Did the sun's rays impart no effect to the atmosphere, the great body of it would be seen as blank darkness; but a partial absorption of a portion of the rays takes place, and reflection of the blue rays. This gives the blue color to the sky, while that of the clouds and the rainbow comes from the effect of the light upon the particles of vapor floating in the atmosphere. These colors are too faint to be perceived in any small quantity of the air. It is only by looking into the great depths of the atmosphere that they become visible, as the color of the ocean is only apparent when the waters are seen in mass.

ATMOSPHERIC ENGINE, also called **AIR ENGINE**, or **CALORIC ENGINE**, is an engine to transform heat into power by means of air. Repeated attempts have been made since the discovery of steam as a motive power to use air as a substitute, and in the records of the U. S. patent office from 1796 to 1847, we find that patents were granted in 1824, '26, '28, and '29 for atmospheric engines. In the year 1836, M. Franchot patented in France an atmospheric engine, in which a part he called the calefactor was composed of a number of parallel pipes. The warm air after working the piston escaped through these pipes, and the cold air ran in around the same pipes in an opposite direction, where it was partially heated by the caloric from the escaping air. It was a process similar in principle to that of warming the feed water of a steam-engine with the escaping steam. In the year 1840, J. and R. Sterling patented, in England, an improved manner of applying this

principle. In their regenerator, the heated air expelled passes first through a number of parallel sheets of metal placed close to each other, where it is partially cooled by contact, and secondly through a number of small pipes, around which cold water is constantly running; at the return stroke the same air returns first through the pipes, and then between the metallic plates from which it resumes the calorific left there in the passage outward. In the same year, Franchot patented the use of metallic wires or of metal shavings for obtaining the same result; whether before or after the invention of the Messrs. Sterling we do not know. The Sterlings built a machine after their patent, which has worked practically for several years, burning 2 pounds of coal per horse power in one hour. This machine may be working yet. Franchot and others also built experimental machines. In the year 1850, Mr. John Ericsson took a patent in England for an air engine, and Nov. 4, 1851, he had one granted to him in the United States for the same invention. The following extract from this last patent states what he claims as his invention: "What I claim as my invention, and desire to secure by letters patent, is the working cylinder and piston, and the supply cylinder and piston, of less piston surface, the two pistons being connected with each other, and working together, substantially as specified, in combination with the regenerator and heater, so that the air, or other circulating medium, shall pass from the supply cylinder to the working cylinder through the regenerator, substantially as specified, and give motion to the engine through the difference of area of the pistons; and this I claim, whether the air, or other circulating medium, be made to pass on the return stroke from the regenerator to the supply cylinder, or any other receiver, or into the atmosphere. I also claim, in connection with the working cylinder, the employment of two regenerators, substantially as specified, in combination with the valves, or their equivalents, for the purpose of causing the air, or other circulating medium, to pass, during a series of strokes, through one of the regenerators to the working cylinder, and back from the working cylinder through the other regenerators, and then reversing the action, as substantially specified. I also claim interposing the heater between the regenerator and the working cylinder, substantially as specified, to heat the air, or other circulating medium, as it passes from the regenerator to the working cylinder, as specified, to supply the heat required. And, finally, I claim communicating the power of the engine to the working beam or its equivalent, by the attachment thereof to one of the pistons, or piston rods, between the open ends of the two cylinders, said pistons being connected or braced to each other, substantially as specified, whereby I am enabled to render the engine compact, and effectually to brace and connect the two pistons and avoid undue strain, as specified." After making several small machines,

Ericsson proceeded with Messrs. Kitching & Co. to construct a large paddle-wheel steamship, named after himself, with air or caloric engines. She went out on a trial trip Jan. 12, 1853. The main shaft of the vessel was 18 inches in diameter, and was cranked in the centre. The radius of this crank was 8 feet 8 inches. To the crank-pin were attached two connecting rods at right angles to each other, and forming angles of 45° with the horizon, one rod being before the other behind the shaft. Each rod was connected with a working beam, and each beam was put in motion by 2 engines. Each engine consisted of 2 vertical cylinders, one above the other, in which moved 2 pistons fastened on the same rod. The lower cylinder, 14 feet diameter and 6 feet stroke, was the working cylinder, the other, of a section smaller by half, was a pump for compressing air, and had a reservoir situated above it. This reservoir communicated with the regenerator, and the regenerator communicated with the working cylinder, by means of pipes in which were valves properly disposed. Under the bottom of the working cylinder was a furnace. Preparatory to putting the machine in motion, air was compressed in the reservoir by a small auxiliary machine, a fire was lighted under the cylinder, and the piston brought to the bottom of the cylinder. The valves in the pipe were then open, the compressed air passed from the reservoir to the working cylinder, and forced up both pistons. When the upper stroke was completed, the air introduced in the working piston had been expanded by the heat from the bottom, and a volume of air equal to that of the pump had been compressed into the reservoir. The valves were now closed, and others opened to let the air in the working cylinder escape outside through the regenerator, when the piston descended by its own weight. This regenerator was a box 6 feet wide and 4 feet high, where were placed 200 parallel partitions in wire cloth, each 24 feet square, through all of which the escaping hot air had to pass. In this passage the air was deprived of a portion of its heat, and the wires were proportionally heated. This heat was taken at the next stroke by the air coming into the cylinder from the reservoir, and the operation was repeated over and over again. The wire used in making the wire cloth was $1/16$ th of an inch in diameter. The whole number of meshes for each of the 4 engines was about 100,000,000. The pressure found best was 12 lbs. per square inch above atmospheric pressure, or 27 lbs. The highest temperature of the air in the cylinder was 384° F. After passing through the condenser it was reduced to 80° F. Working at a velocity of 15 revolutions per minute, the weight of air which passed through the engine in an hour was 75 tons. There was an arrangement for cutting off at $3/4$ stroke, the air was thus expanded and let out at 12 lbs. pressure, that is 3 lbs. above the outside pressure. The steamship Ericsson was, after a few months, found deficient as a practi-

cal vessel, and her calorific or atmospheric engine was taken out of her to make room for a steam-engine. No full and accurate account of her performance has ever been given. In 1836, when Franchot had his first model built, he invited François Arago to witness an experiment. After a careful examination, the great astronomer turned round, and in a quiet manner said: "My friend, if your invention was absurd, I would go and say nothing; but no, the principle is right, the invention is great, and I say, if you have a family whose happiness depends on your success in life, or if you do not feel in yourself the faith and strength of a martyr, sell your machine for old iron, and look for a situation in a counting-house." Franchot neglected the warning, and at the present day is still pursuing through difficulties the realization of his plans. John Ericsson is doing the same in New York. In July 31, 1855, he patented an improvement in air engines, consisting mainly in the suppression of the air-pump and air-reservoir, as used in the steamship, and in heating the air in a separate vessel called a heater, instead of in the working cylinder. The object of the air-pump he now attains, by using two pistons in the cylinder. The first, called the working piston, has two rods, one on each side of the centre, and the second, called the supply piston, has one rod passing through the centre of the working piston. The supply piston is worked by a cam arranged in such a manner as to make it accomplish a stroke during the time that the working piston is passing slowly the dead point of the crank. With this arrangement it is necessary to yoke 2 cylinders on the main shaft, which act alternately with their full force. This plan was simplified, and became the object of another patent granted April 16, 1856. The leading feature of this new improvement consists in operating with only one piston, which compresses the cold air on one side into the generator and heater, at the same time that it is propelled forward by the force of the heated air on the other side. The air engine is thus transformed from a primitive single-acting machine into a double-acting one.

ATMOSPHERIC RAILWAYS. The first attempt to use atmospheric pressure as an agent of transportation, was made in 1810 by Medhurst, a Danish engineer. At that time he conceived the idea of carrying mails in a pipe, by creating a vacuum in front of a travelling piston, inside of which the letters were to be placed. Years after, in 1823, he conceived the project of driving cars by the same means. The piston being united to the front car by a rod passing through a longitudinal opening in the top of the tube, this opening was closed by a water valve, which opened to let the rod pass, and closed behind, ready for the return trip. The use of a water-valve made it necessary for the railway to be perfectly level, and for this reason the plan was soon laid aside. Since this first invention, patents after patents have been granted, in France and England, for valves to close the longitudinal

opening in the tube, for travelling pistons, air-pumps, &c., and for several new plans of using atmospheric pressure, or compressed air. The main difficulty in atmospheric railways is in constructing the longitudinal valve which closes the tube. It must fit with mathematical exactness, as the least imperfection in the closing would amount, for a few miles of pipes, to an opening larger than the pipe itself, and it must be so constructed as to open promptly without requiring much power, when the piston passes along, and to close tight behind it immediately after. Most inventors have devoted their time to this part of the subject, and among the 80 different valves which are before us, we find the most ingenious devices, and also the most absurd. In the greater number of them, India rubber, or leather is combined with metal plates to form the covering. The piston rod, whose section is long and narrow, like the water line of a clipper, opens the valve, and lets it close gradually, while a few rollers, attached to the car behind the piston rod, press upon the valve to make it tight, and a greasing instrument fills up the minute openings that remain. The plan of Olegg and Samuda, patented in 1838, was one of the first invented, and is to this day as good as any. It has been adopted on the atmospheric railway of Kingstown in Ireland, of Croydon in England, and in 1845 on that of St. Germain in France. At the top of a cast-iron tube, properly strengthened by circular flanges, eccentric to the tube, there is a longitudinal opening, the sides of which are planed, tapering upward; a band of iron, of the thickness of the tube, is made to fit in the opening. Over this, a band of leather is placed, extending some distance on each side of the iron band, to which it is firmly fastened. The part extending on one side is used as a hinge for the valve. It is firmly pressed, throughout the whole length, against the tube, by means of a bar of iron, and a few screws which go through a rib, cast on the tube for the purpose. The part extending on the other side rests on the tube in a place where it has been planed smooth. Every time a train passes over the line, the leather is impregnated with a mixture of tallow and wax, and is pressed by a roller against the tube, on which it sticks, and closes the opening. The closing becomes yet more perfect when a vacuum is made inside the tube, one of the results of atmospheric pressure being then to force the leather against the opening. The piston used by Olegg and Samuda is a cylinder of cast-iron, made to fit by leather rings screwed at each end. This piston is at the end of a horizontal rod 10 feet long, at the other end of which is a cylinder similar to the piston, and which balances it. To the middle of this horizontal rod is fastened a vertical rod, which passes outside the tube through the opening, and is attached to the first car. Between the vertical rod and the piston there is a space 5 feet long, in which there are rollers of increasing diameters, to open the valve gradually. After the ver-

tical rod has passed onward, the valve closes behind it by its own weight, with the mixture of tallow and wax, and a pressure is applied to it by contrivances attached to the car 5 feet behind the driving-rod.—On the three railways above mentioned, on which Olegg and Samuda's valve has been adopted, the tube is placed between the rails, and bolted to the sleepers by means of ribs. The tube extends the whole length of the road, at each end of which are steam-engines and air-pumps of sufficient power to create a vacuum in a short time, and maintain it, whatever be the velocity of the train. The tube is closed at each end by valves of a peculiar construction, which allow the piston to come in and out smoothly, and without letting in the air. Several other arrangements have been proposed, and some means of putting them in practice have been protected by patents. One consists in reversing the valve of Olegg and Samuda, by making it open inside, and propelling by compressed air. Another in laying a closed pipe, of a smaller diameter, along the whole length of the road, and having by the side of it, in the centre of the track, and at equal distances from each other, portions of a propelling tube, with a longitudinal valve. The result is to push the train forward at equal intervals of time, depending on its momentum to make it run over the intervening spaces. In a third plan, the pipes are used to convey compressed air to the cylinders of an ordinary locomotive, deprived of its boiler. This air enters the cylinders, and acts like steam. A fourth plan is to build the pipes of wood, without longitudinal opening, and to make the piston a magnet of sufficient power to attract a second magnet united to the cars, and thus drive them. Several inventors have proposed the use of an air-tight cloth tube, to be placed between the rails, on all the length of the road. This tube is squeezed between 2 vertical rollers, which are under the front car. If compressed air be forced into the part of the tube which is behind the train, the tube will be inflated, and the 2 rollers will be pushed forward, and will carry the cars with them. Several patents have been granted for flexible valves, which never open. The piston is inside, and presses up the flexible valve against a roller attached to the car, and propels the train forward. In another system there are 2 tubes, and no rails. Filling the tube with steam, either to be there condensed or to act by compression, is a plan preferred to filling with air, by some persons. There is also an invention for burning powder in large chambers, and sending the gases produced into the tube, to propel the trains. Several inventors have done away with the longitudinal valve, and replaced it by mechanism. In one of these devices, a rack 80 feet long is attached to the piston, and in recesses cast in the tube, 80 feet apart, there are pinions, the shafts of which pass out through stuffing-boxes. On these shafts, outside the tube, other pinions are keyed, which act on another rack attached

to the cars. It is obvious that the piston and the car being first placed one above the other, when the piston is started, the rack attached to it will make the inside pinions revolve, and that the pinions outside, on the same shafts, will propel forward the rack attached to the car. The number of patents for atmospheric railways granted during the few years preceding 1847, is 70. During the 10 years which have elapsed since, only a few have been applied for. It is now generally admitted that if atmospheric railways are advantageous, it is only as a substitute for ropes, to pull a train up grades too steep for locomotives. They may accordingly be useful for crossing mountains, without tunnelling, or at the approaches of a city situated on the top of a hill. New circumstances may also occur in which the use of locomotives would be either impracticable or attended with great danger or inconveniences. The proposed tunnel, about 20 miles in length, under the channel, to unite France to England, which has been lately spoken of, is a case. It is obvious that the smoke of locomotives accumulating in such a narrow pipe, with means of egress only at the ends, would make its atmosphere suffocating, and that in such a position the danger from fire would be considerably increased. In the event of such a construction being executed, the money and talents which have been expended on atmospheric railways would prove not to have been wholly squandered.—We will close the subject with a few figures furnished by the engineers who have built atmospheric railways.—LONDON TO OROBORO: The distance is 15,800 yards; the highest grade is 1:100. The inside diameter of the tube is 15 inches. The vacuum made leaves in the tube a pressure of 8 pounds to the square inch. The velocity is 80 miles an hour, with a train of 60 tons. The diameter of the steam cylinder is 40 inches; that of air-pump 57 inches stroke; of both, 4 feet.—PLYMOUTH TO EXETER: Nearly level for 22 miles, where the diameter of the tube is 18 inches; at one place the grade is 1:420; there the tube is 22 inches. The air-pumps are 3 miles apart.—DALKEY TO KINSEY: Diameter of air-pump, 66 inches; stroke, 65 inches; velocity of piston, per second, 4 feet. The length of the tube is 3,000 yards; its diameter is 18 inches.—NANTERRE TO St. GERMAIN: This road is built between Montesson and St. Germain. The distance is 3,800 metres (about 3,660 yards); grade, 1:30. The diameter of the tube is 0.63 metres (about 25 inches). There are 2 steam engines of 300 horse-power each. The diameter of the air-pumps is 8 feet; stroke, 7 feet 6 inches. The boilers are tubular, and the draft is produced by a fan-blower. This arrangement enables the engineers to make the machines work to their full power each time a train is to be pumped up, and, by stopping the blower, to keep them lighted without consuming much coal when they have no work to perform.

ATOLL. In the Indian ocean, and in that

part of the Pacific ocean called Polynesia, comprising altogether a space that may be equal to the whole continent of Asia, are found scattered groups of low islands and reefs of rock, of hundreds, and in one instance of 1,000 miles in length, all which owe their existence to the work of the coralline zoophytes. Among these islands are a great many of the form of a ring, being circular reefs of coral, just rising above the waves, and inclosing a sheet of water, which is connected with the ocean by an open passage. These are called by the natives of the Maldives, atolls, or atollions. These annular reefs seldom have a width of more than a few hundred yards. Upon this strip materials are thrown up by the waves, which form a soil; and on this the cocoa-nut trees take root, and send their tall stems far up into the clear blue sky. Under their shelter the Malays build their huts, not always beyond the reach of the waves in the great storms. Each side of the narrow grove is a beach of glittering white sand—the comminuted coral. Within, this is washed by the still waters of the lagoon, which, in the rays of the vertical sun, are of a most vivid green. Without, around the outer margin of the reefs, the never-ceasing breakers raised by the trade-winds curl their snow-white wreaths; and beyond are the dark swelling waters of the ocean. The diameter of the lagoon is sometimes more than 80 miles, and the depth from 100 to 400 feet. The open passage never being on the windward side, affords safe entrance and exit for ships, which find in them still harbors. Outside of the coral reefs, the depth of water suddenly increases to more than 1,000 feet; indeed, between neighboring atolls it is usually regarded as unfathomable. On the edge of this deep water, and in the midst of a sea rolling more heavily than in our temperate regions, the soft, gelatinous coralline animals perfect their structures, and build up out of the calcareous matter they abstract from the sea-water solid ledges, that withstand the most violent action of the waves—monuments far exceeding in grandeur and stability the works of man. The peculiar form of the atolls, and great depth to which the coralline rocks reach, it being ascertained that the animal cannot work in water more than 120 feet deep, are subjects of investigation of no little interest. It has been supposed by Lyell and others, that the lagoons occupied the craters of ancient volcanoes, which had subsided, and that around the edges of these craters the zoophytes had built their structures. But the great numbers and extraordinary size of many of the atolls made this hypothesis quite improbable, and Lyell at last gave it up for the more plausible explanation of Mr. Darwin, which also meets the difficulty of the coral extending to so great depths. This explanation was based on the opinion long before expressed by Lyell, that the bottom of a large portion of the Pacific, where the atolls are found, was slowly subsiding. The reefs of coral, originally

commenced in shallow water along the coast of a continent, and around the shores of islands of all sizes, continued to be carried upward after their foundations have sunk to a greater depth than that in which the zoophytes can live; and after the islands themselves have disappeared beneath the surface of the water. These operations—the sinking of the land and the growth of the coral—like most of the great geological changes, take place slowly and insensibly; but the long periods of time required for the accumulation of the alluvial sediments at the mouths of great rivers, which are included in the most recent geological epoch, suffice no doubt for the formation of these atolls. Were the subsidence not very gradual, the top of the reefs might be carried down faster than the zoophytes could keep them up, and thus they would be lost in the deep waters of the sea. But these operations of nature appear to be planned in harmony with each other, and with reference to the great object, which is accomplished by the coralline animals—the separation from the waters of the ocean of the excess of soluble salts of lime conveyed into them by all the rivers. Their field of operations is this great area of hundreds of thousands of square miles of the tropical seas. In this the islands are all of coral, except occasionally one of granite, which has not yet disappeared, but has its coral reef encircling it a few miles from its shores. That the bottom of this ocean should originally have been of unfathomable depths, with an immense number of elevated points coming up nearly to the surface, on which the zoophytes could commence their operations, and hardly one of these elevations reaching above the waters, is far more improbable in our present knowledge of the instability of the surface, than that a continent has here subsided, and, as its hills disappeared beneath the waters, the reef-builders still kept their structures around these hills even with the surface. The outlet was the original outlet of the surface waters that flowed into the ocean; and the tide rushing in and out has ever afterward served to keep it open. The material of the reefs is not all coral. With this are intermixed alternating beds of the numerous shells, which abound in these seas. The lower portions of the structures are filled in with a great variety of organic remains, and with fragments of coral. By the action of the waves, the solid substances are ground into fine calcareous mud, like that produced by chalk. This is packed into the crevices of the dead coral below, and the mass becomes solid and compact as the coralline limestones of ancient rock formations. While over the bottom of the lagoons, and of the neighboring ocean, the same insoluble sediment is spread, building up layers of rock, that will probably not differ much from the chalk found along the English coast.

ATOMIC THEORY. Theory may be defined as explanation of phenomena, and of course presupposes the most intimate and ex-

tensive acquaintance with facts. As these multiply, we demand to know how they are related and caused, or the reasons why they exist as we find them. In the case of chemistry, the facts and laws of combination were first established. We are chiefly indebted for these to the introduction and perfection of the balance. It results from innumerable weighings, that chemical composition is definite; that is, the same compound substance has exactly the same constituents in the same proportions. The composition of water, for example, is definite and unchangeable. It consists of 8 parts by weight of oxygen, to 1 by weight of hydrogen. Its constitution is fixed and constant, and may therefore be numerically expressed. So potash consists of 39 parts by weight of potassium, and 8 of oxygen. Common salt contains 35 parts of chlorine, to 23 of sodium. When we analyze them, we get these quantities; when we produce them, we use these quantities. And not only water, potash, and salt, but all chemical compounds, are put together in obedience to certain fixed laws of proportion, different in different substances, but invariable in the same kind of compound. We are thus to regard all forms of matter as mathematically constituted. Not only are the elements bound together in a quantitative order, in the stable condition of substances, but when a compound is broken up, and its elements released from their affinities, they cannot escape the law of numerical destiny; they rush into new unions, but still in definite proportions. These proportions are so well established, that scales are formed of combining numbers, opposite each element being placed the number which governs it in all cases of its combination. Thus the number associated with oxygen is 8, which accompanies it in all its alliances. It combines with carbon, 8 oxygen to 6 carbon, to form carbonic oxide. Another 8 of oxygen may then be added to carbonic oxide, producing carbonic acid. The proportion of oxygen in carbonic acid is a multiple by 2 of that in carbonic oxide. This affords an illustration of what is called multiple proportions. In nitrous oxide we have nitrogen 14 to oxygen 8. In nitric oxide, nitrogen 14 to oxygen twice 8, or 16. In hyponitrous acid there is nitrogen 14 to oxygen 8 times 8, or 24. In nitrous acid, we find nitrogen 14 to oxygen 4 times 8, or 32; and in nitric acid there is nitrogen 14 to oxygen 5 times 8, or 40.—These quantities, or combining numbers, though widely variable in the several elements, are equal in chemical power. One of hydrogen unites with 8 of oxygen in generating water, but the oxygen is not therefore 8 times superior to the hydrogen in neutralizing or saturating power, or effective value; they are exactly equal, and the quantities taken are hence called equivalents. This equivalency is universal and reciprocal. The proportions with which any 2 bodies combine with each other, is that in which they combine with every other. When 2 bodies combine with a third, as

they are both equivalents of the third, so they are also equivalents of each other, and unite together in exactly the same proportions. Thus 1 part of hydrogen combines with 8 of oxygen, and 35 of chlorine combine with 8 of oxygen; but 35 of chlorine is the very quantity that combines with 1 of hydrogen. Thus a single combining or equivalent number attached becomes the exponent of its chemical power in all cases of its combination. The numerical laws of combination apply to compounds as well as to elements. Thus the equivalent for carbonic acid is carbon 6 and oxygen twice 8 = 22; for lime it is calcium 20, oxygen 8 = 28. Carbonic acid and lime therefore unite 22 to 28 to produce carbonate of lime or marble.—The facts of chemical combination, thus briefly stated, are the results of experimental investigation, and are independent of all speculation or hypothesis. But the human mind is not satisfied with the bare expression of facts. It seeks for explanations—for the hidden causes of phenomena—for principles which will account for the effects. There are undoubted reasons why chemical combination occurs in the mode we have indicated. There must certainly be causes which determine combination in these fixed ways, and prevent it from taking place otherwise. The atomic theory offers a reason—assigns a cause. The term atom, signifies a portion or particle of matter, exceedingly small, and not capable of being divided. The atom, as conceived by the chemist, is an amazingly minute but indestructible and unchangeable particle, and all matter is believed to be made up of these. In ancient metaphysical speculation, matter was held to be infinitely divisible. They said, we cannot conceive particles so small, that, if possessing weight, bulk, and figure, they cannot be halved or divided into lesser quantities. Without denying that atoms may be conceived as infinitely divisible, the chemist assumes that, in point of fact and in nature, their divisibility has a limit.—The strength of the faith of modern chemists in the existence of atoms, may be well illustrated by quoting the language of Liebig: "Without disputing the infinite divisibility of matter, the chemist merely maintains the firm and immutable foundations of his science, when he admits the existence of physical atoms as a truth entirely incontrovertible." The atomic theory of chemistry was announced early in the present century by Dr. Dalton, of Manchester, England. Starting with the doctrine that matter consists of ultimate impenetrable and imperishable particles, he teaches: 1, that all the atoms of the same element possess exactly the same weight; 2, that the atoms of different elements possess different weights; and 3, that the number that indicates the weight of the atom of any element, is the same as the combining or equivalent number for that element. For the vague conception of abstract proportion, there is substituted the distinct idea of a solid ponderable atom. Its weight, compared with oth-

er atoms, is its combining number. One is to be considered stamped upon every particle of hydrogen, as if the whole amount of it in the globe had been coined in the same mint into pieces of exactly the same value. Carbon, in like manner, is supposed to have its atoms stamped with 6, oxygen with 8, sulphur with 16, &c.—This gives a rational and most satisfactory explanation of the laws of combining proportion; they follow as its necessary consequence. For if water be formed by the combination of oxygen with hydrogen, atom to atom, then its composition must be definite and constant. Again, if the atoms of each element possess immutable weights, they must in all their combinations exhibit equal and reciprocal values. Replacement or exchange can only take place in equivalent proportion. Multiple proportions also result directly from the unity of atoms. As the least quantity of an element in combination can be increased only by the addition of whole atoms, so the number expressing the higher quantity must be an exact multiple of the single atomic number. No fractional quantity of any element or substance can be added, because the combining atom cannot be fractured. This view offers such eminent advantage, both in the acquisition and retention of chemical knowledge, that it has been universally adopted.

ATOMS, according to the hypothesis of some philosophers, minute, indestructible, and indivisible particles of matter. This speculation began in early Greece, and has found supporters down to the latest times. Dalton's discovery of the law of definite chemical proportions has rendered the language of the atomic theory popular among the moderns, because the facts of chemistry are more easily expressed by it; just as Leibnitz's false language of infinitesimals is more readily used than Newton's true language of fluxions. But many of those who now speak of atomic weight and of atoms, signify by the latter word the centres from which physical forces act, without meaning to decide whether those forces reside in the will of the Creator, in a monad, or in an atom. See ATOMIC THEORY.

ATONDO Y ANTILLON, Isidoro, a Spanish admiral of the 17th century, distinguished in connection with the annexation of lower California to Spain. He proposed to the Spanish government to defray the expenses of an exploring expedition to lower California, which sailed, under his command, May 18, 1688, with 2 vessels, a crew of 100 men, and 8 Jesuits from Chacala, and landed at La Paz after a fortnight's sail. Atondo immediately set out for the interior, but came into collision with the Guaxores Indians, who refused to supply him with provisions. He was obliged to depart, but after having put in at Cinaloa and supplied himself with stores, he returned to the Californian coast, and effected his purpose by getting hold of an extensive bay in lat. 26° 30', which he called St. Bruno. Next he built a church, and

took formal possession of lower California in the name of Spain. The missionary exertions of the Jesuits were rather successful, as they induced 600 Indians to join the church of Rome, but the general features of the country were not encouraging. The soil was barren, and Atondo returned to Spain after having brought his vessels, men, and the 8 Jesuits safe back to Mexico. The colonization of the new country was not fully accomplished until after the expedition of Francisco de Harinas, in 1694, when Salva Tierra and Father Kino, one of the Jesuits of the first expedition, completed the work begun by Atondo.

ATONEMENT (at-one-ment, reconciliation), a word used by the old English writers to express the closing of a breach between two alienated persons. Thus in Shakespeare,

He seeks to make atonement

Between the duke of Gloucester and your brothers.

Further, the agency by which the discord is removed, the act of reparation or satisfaction rendered for an offence committed or an injury done, was called the atonement. Thus Johnson uses the verb, "By what propitiation shall I atone for my former gravity?" In a theological sense the word is employed to describe the restoration of harmony between man and God, and the means by which that restoration is effected. In this application the term has been narrowed still more, being technically confined to one peculiar mode of restoring the union between man and his Maker, namely, the expiatory sacrifice made by Jesus Christ. The doctrine of atonement, of a reconciliation brought about between the creature and the Creator, through the agency of expiatory suffering, was common to all the ancient religions. It was founded on the dread of the divine vengeance, prompted by the consciousness of ill desert, which seemed to remove the Deity to a great distance from the human soul, and to change his aspect from clemency to wrath. Sensible of an interrupted communion with the Infinite, and feeling themselves to be objects of displeasure, men thought to reinstate themselves, and to recover the forfeited favor of heaven by expiatory rites and sacrifices. The Hindoos sought to placate the Deity by the blood of animals, and even resorted for this purpose to the offering of human victims. The Bramins laid the sins of the people upon the head of a horse. But the blood of man, as being the highest of creatures, was deemed the noblest propitiation, the more efficacious if poured forth freely. He that immolated himself was supposed to expiate not his own sins only, but also those of his kindred. The self-devotion of a great personage, of a king or a priest, was sufficient to make atonement for a nation's guilt. The Chinese entertained the same belief, that they could by timely sacrifices of fruit, grain, or living creatures, bestial or human, avert the calamities which, in their judgment, expressed the wrath of heaven against their sins. Herodotus, speaking of the Egyptians, says, that

they who offer sacrifices solemnly invoke curses upon the victim, imploring that any evil menacing them or the land of Egypt, might be turned upon these devoted heads.—The traditions of Greece and Rome abound in examples of human sacrifices brought as victims or self-dedicated, to avert public calamity and to pacify the wrath of the gods. And after human sacrifices were prohibited, the belief in the propitiatory efficacy of blood entered into the less barbarous sacrificial observances of the historical periods. The heroic self-devotion of Greek and Roman generals was dictated by the persuasion that the free-will offering of their lives would save the army from destruction. Cæsar, writing of the Gauls, observes: "The whole nation is excessively addicted to religious observances, so much so, that persons who are afflicted by the severer maladies, or who are exposed to perils in battle or elsewhere, either slaughter men as victims, or devote themselves to death, believing that unless life is rendered for life, the immortal gods cannot be appeased."—The sin-offerings of the Hebrews had, according to the best authorities, a similar expiatory significance. They were brought to propitiate an offended Jehovah. The victim was regarded as a substitute for the sinner, who laid upon it the doom he has incurred himself. Thus in Levit. xvii. 11, it is declared: "The life of the flesh is in the blood, and I have given it to you upon the altar to make an atonement for your souls. For it is blood that maketh atonement for the soul." The sprinkling of the blood in the case of a sin-offering, indicating the utter dissipation of the life that dwells in it, contains the idea of the substitution of the victim's life or spirit for that of the offender. The belief in a propitiation of the Deity through vicarious sufferings is frequently expressed in the Jewish Scriptures; as, for example, 2 Sam. xii. 15, xxiv. 10; Isaiah liii. 4. The notion of transferred or imputed guilt is also distinctly conveyed in passages like these: Deut. ch. xxi; Jerem. xxxiv. 18; Levit. xvi. 21; Isaiah xliii. 8. Among the Hebrews propitiatory or atoning sacrifices were steadily offered for the whole people at the New Moon, the Passover, Pentecost, the Feast of Trumpets, the Feast of Tabernacles, and the great day of Expiation. They were offered for the priests and Levites at their consecration, and for the high-priest on the day of Expiation. They were also offered on occasions of purification, which were very numerous. The Christian doctrine of atonement, according to which Christ, by the offering of himself, has obtained the forgiveness of human sins, connects itself with the older religions, and especially with that of the Jews. Into an explanation of the several views taken by Christians of the way in which this reconciliation has been effected by the Savior, we cannot here, with propriety, enter.

ATONY (Gr. *a* privative, and *tonos*, tone or force). This term is applied to a want of force or tonicity in the organs, tissues, and fibres of

the body. It is an incipient state of weakness and debility, which, when more developed, is termed "asthenic," or feeble and unhealthy. Atony in the fibres of the body is analogous to indifference in the mind. It is not fatigue alone, or positive weakness and disease, but a state of comparative inertness and insensibility, arising from depressed vitality, especially in the contractile fibres. Lassitude is a temporary want of tone and power in the organs and the tissues of the body; atony is a continuous want of tone and power. When lassitude is not repaired by rest, and nourishment, and sleep, in usual proportions, there is atony, or incipient weakness and debility; and where this state continues long, disease ensues, or that kind of unhealthy weakness which accompanies a want of power to make pure blood, and want of vitality and tone enough in the organs to carry on the functions of nutrition from the blood when made. This is the asthenic state, and may be either the forerunner of a serious disease, or the result of long-continued suffering and confinement. Where atony is the result of inactivity, too much confinement at home or in bed, with indulgence in good food and stimulating beverage—a wet sheet or a shower-bath every morning for a time; early rising and exercise in the open air; temperance and moderation in diet, with useful occupation for the mind, will generally bring back tone to the whole organism and health to mind and body; but where excessive labor and prolonged anxiety produce atony or indifferent nutrition and tonicity of fibre in the organs, a more careful, gentle, and continuous treatment is required to restore the feeble and depressed vitality to its normal state. Rest of body and peace of mind are absolutely indispensable, as well as moderate diet, exercise, and recreation. Travelling and change of scene and climate are often useful in restoring health and strength in cases of debility of this peculiar nature.

ATOONI, or ATONI, a tribe of Bedouin Arabs, between the isthmus of Suez and the valley of Kosseir.

ATRATO, a river of New Granada, South America. It rises near lat. 5° N., and pursues a nearly due north course for more than 300 miles, to its mouth on the shores of the gulf of Uraba, or Darien. It is a river of some interest, from the fact, that the bar at its mouth being crossed, it has a wide channel not less than 35 feet deep for the first 96 miles above its mouth, with a fall not exceeding 2½ inches to the mile, and that for 42 miles further, a channel exceeding 18 feet in depth can be obtained with little expense; while the distance across to the Pacific ocean, from which the river is separated by one of the lowest ridges of the Andes, does not exceed 30 miles, or thereabouts, and branches of the Atrato from the west are stated to almost meet others from the Pacific, which head in this dividing ridge. Examinations were made in the year 1852, by Mr. John C. Trautwine, of Philadelphia, civil

engineer, of several routes across the mountain ridge, with the view of determining the practicability of constructing a ship canal by this river, to connect the Caribbean sea with the Pacific. His report was, that any such undertaking would be Quixotic in the extreme; and that he could "not entertain the slightest hope that a ship canal will ever be found practicable across any part of the ridge." The statements of the low height and easy passage across the mountain at various points, he found to be greatly exaggerated, though it is true that at the pass of the San Juan river, a branch of the Atrato, canoes are carried over with great labor, after being brought with the greatest difficulty up the rapids at the head of canoe navigation. Notwithstanding this report, an expedition was despatched by the United States government in October, 1857, under the direction of Lieut. Craven of the navy, and Lieut. Mickler of the army, to explore the same route. They left Carthagena on the 5th November, and are expected to report to the government on their return in the spring of 1858. The Atrato for nearly its whole length runs through a low swampy region, which in times of freshet is entirely overflowed. At ordinary stages of the water, the river runs between levees, which are a few feet higher than the swamps behind, and through which in low stages the swamp water is seen trickling down among the accumulation of leaves and branches which, mixed with black mud, make up the banks of the river. Not a stone is to be found from the mouth to the head of canoe navigation. The first signs of cultivation are met with 60 miles up the river, at the mouth of the Sucio, but the improvements are of the meanest description; and nothing better is found for 40 miles further. Quibdo, in lat. 5° 45' N., is the only town of any consequence on the river. It is a miserable place of 1,500 inhabitants, mostly blacks, with some Indians and a few whites. It is situated on several isolated hillocks of gold gravel and clay, in the midst of the swampy region, which extends all around. Many of its inhabitants, who have never left the place, have never at any one time walked a mile in the course of their lives. The temperature of the region is excessively close and sultry, and the rainy season continues all the year, not 20 days probably passing in the whole year without rain. The comforts and even necessities of civilized life are almost entirely wanting; while the numerous disagreeable and annoying features connected with tropical life, are here met with in the highest state of perfection. Gold is found in fine dust in the beds and banks of the Atrato, at and above Quibdo, and also of the different branches of the river. It is particularly abundant on the western slopes of the Cordilleras, east of the Atrato. Some portions of the country are described as of exceeding richness in gold, so that it is not unlikely this region may become at some time a favorite gold-mining district; but at present the difficulties of procuring the necessaries of life, and the

discomforts of the climate, are of too serious a nature for foreigners to resort to it. The gold yearly brought to Quibdo, and sold by the natives to the merchants, amounts to about \$300,000. Platinum is also found in some of the provinces of this region, and in districts further east, mines of silver and copper have been worked. Near Bogota are the celebrated emerald mines of Mussa. Above Quibdo, the river Atrato receives several branches, of which the Quito is the most important. Were it not for the incessant fluctuations of this stream, which within a few hours frequently reduce it from its ordinary ample channel depth of 7 feet or more to 5 or 6 feet, or even less, the Quito would present, with the Atrato, an uninterrupted steamboat thoroughfare of no less than 252 miles from the gulf of Darien. This stream is wholly in the gold region, and its branches appear to lie in the richest portion of it. Mr. Trantwine is of opinion that the gold region on the western slopes of the Cordilleras in New Granada, covers some 2,000 square miles, over which gold is now constantly collected almost indiscriminately as regards choice of locality; and that the exportation of it from the eastern slopes of the same range annually amounts at this time to some millions of dollars—these exportations being through Carthagena to England and France. The great river Magdalena, and its tributary, the Cauca, alike with the Atrato, reach this gold region.

ATREBATES, a people in Gallia Belgica, whose name appears in the modern Artois. They formed a confederation against Cæsar, and furnished a contingent of 15,000 troops. A colony of them settled in Britain. They resided in the modern Oxfordshire and Berkshire.

ATREUS, a celebrated prince, chief, and hero, of the heroic and tragic ages of Greece. In the Homeric poems, he and his ancestors, the Pelopides, are spoken of, merely, as hereditary hero kings of the Peloponnesus, and he especially as the grandfather of the Atreidæ brothers, on whose account the war against Ilium was undertaken; without any reference to the horrible tragedies of incest, adultery, murder, matricide, and all unnatural and unutterable horrors, which are ascribed to the fated race by the tragic poets, to whom the awful reproductive crimes and horrors of this doomed family have afforded more subjects than any other similar or secondary legend. To no other family, in Grecian mythology, does so horrible a legend as this attach, though many are full of almost unimaginable horror; especially that of the Labdacidæ of Thebes, which comes the nearest to this of the Atreidæ of Argos, embracing, like it, the crimes of incest, parricide, and fratricide, each arising out of the last preceding crime, and, in the latter stages, inevitable and involuntary in the actors; who are represented as predestined, and driven by a blind necessity to the commission of new crimes, which are both the punishment and the expiation of the ancestral guilt, in the first instance, and which are yet im-

puted as deadly sin to the perpetrators, who are innocent of every thing except being the playthings, tools, and victims of an inevitable destiny.—In this legend, the first crime is that of Tantalus, who slew, cooked, and served up, at a solemn banquet, given to the gods, his own son Pelops, in order to test their omniscience. Tantalus being duly punished, and Pelops resuscitated, the victim of the paternal crime, after winning and marrying the beautiful Hippodamia, and having by her two sons, Atreus and Thyestes, further aggravated the ancestral curse and crime by the murder of Myrtilus, son of Mercury, who, in his divine vengeance, enforced all the woes which followed on the fated races.—Atreus, the elder brother, had by his first wife a son, Plistheneas, who married Aërope, and had by her two sons, Agamemnon and Menelaus, known, from their father's patronymic, as the Plistheneidae—from that of their grandfather, by whom they were educated until manhood, as the Atreidae. On the death of Plistheneas, Atreus married the widow of his son, Aërope; and she was shortly afterward seduced by her husband's brother, Thyestes, who, on the discovery of his foul adultery, fled for safety to Sicyon, in Theoprotia, where dwelt, unknown to him, his own daughter Pelopia. To her, meeting her casually by night, ignorant who she was, he offered violence; in consequence of which she bore a son, Ægisthus, to her own father. In the mean time, twin children were born to Aërope, the offspring of her adultery with Thyestes; and these, having induced his brother to return home, on pretence of pardon and reconciliation, Atreus slaughtered, cooked, and served up to their father—a repetition, it is to be observed, of the cannibal Pelopidean feast—exhibiting their heads to him, in proof of the nature of his unnatural meal. Next to this horror, Atreus unknowingly marries Pelopia, pregnant of Ægisthus, who is exposed at his birth, miraculously preserved, and afterward recognized by his mother, who at the same moment recognizes her crime, involuntary as it was, and instantly avenges it by committing suicide with the very sword of her own father, which she had snatched from him in the moment of her struggle with him, and which he had at once challenged as his own, seeing it in the hands of his son to whom Pelopia had given it. During the occurrence of these events, the Atreidae, Agamemnon and Menelaus, had married, respectively, the half sisters Clytemnestra and Helen, the former daughter of Tyndarus, the latter of Jupiter, and Leda. Helen, seduced by Paris, son of Priam, king of Troas, flies to Ilium, and the Trojan war ensued. Agamemnon being elected the chief of the confederate kings, landed to avenge his brother's wrongs, and to redeem the captured beauty. During his absence, Ægisthus, being left guardian of the palace, kingdom, wife, and treasure of Agamemnon, seduces the queen; and on the return of the king, victorious after the ten years' siege and the fall of Troy,

they murder him conjointly in his bath, justifying the deed, as if it were an act of lawful retribution, for the death of his own and Clytemnestra's daughter Iphigenia, whom he had sacrificed, at Aulis, to Minerva Polias, in order to propitiate the storms, and secure the sailing of the wind-bound host. The last act of this fearful tragedy is the slaying of Ægisthus and the matricide of Clytemnestra, by her son Orestes, who avenges his father thus, at the express instigation of the oracle of Apollo; for which deed he is hunted by the furies, until he is, at length, acquitted by Minerva in a solemn trial, held on the Areopagus, and purified by lustrations in the temple of Apollo, which ceremony in the end breaks the thread of fate and terminates the ineffable sins and sorrows of the house of Atreus. This frightful story is evidently post-Homeric in its origin; and, being evidently mythical from beginning to end, it is difficult to conceive how such a tissue of horrors should ever have been conceived or imagined by any human brain. It seems, however, to bear internal proof of being an *ex post facto* tale, manufactured as evidence of the truth of a preconceived superstition, or doctrine, concerning inevitable destiny, involuntary reproductive guilt, sin begetting sin, and punishment punishment *ad infinitum*. On this account only, and for this curious consideration, is the horrid and revolting tale worthy to be preserved from oblivion, coupled with the singular influence which it possessed on the mind of the Greek tragedians, all of whom wrote many dramas on this odious subject; and with the fact that the grandest of all their extant works, the Oresteian trilogy of Æschylus, is the relation of the closing acts of the long tragedies of the Atreidae.

ATRI, a town in the Neapolitan province of Abruzzo Ultra I., situated on a steep hill, 4 miles from the Adriatic, and 18 miles S. E. of Teramo; pop. 6,600. It contains a cathedral, and several convents. The town is built on the site of the ancient Hadria, an old Roman colony rebuilt by the emperor Hadrian, whose family originally dwelt there. Traces of the old walls of the town are still visible, and mosaic pavements and other relics of the past have been excavated.

ATRIP, in sea phraseology is applied indifferently to the anchor or the sail. The anchor is atrip when it is drawn out of the ground in a perpendicular direction by the cable or buoy-rope. The topsails are atrip when they are hoisted up to the mast-head or to their utmost limit.

ATRIUM. I. In Roman architecture, the central room of the house, also called *comædium*. In this room the family lived and eat together; here the lady of the house sat at work with her maidens; here the clients assembled, and here stood the *laræ* and *penatæ*. The room was uncovered in the centre, toward which the roof sloped, to throw the rain-water into a cistern in the floor of the room, around which stood the household deities. II. The

forecourt of a temple. The *atrium* of the temple of Libertas is most frequently mentioned. III. In ecclesiastical architecture, it denotes an open space before a church, making part of the narthex, or ante-temple. Penitents and others, not allowed to penetrate nearer to the church, stood in the *atrium* to solicit the prayers of the pious in their behalf.

ATROPATENE, in the remotest antiquity, according to Görres, was the name of the country between the lake of Spauts or Ooroomeyah and the Caspian sea, bounded on the N. by the river Koor, the ancient Cyrus, and on the S. by the Mardus, or Amardus, now Kizil-Oozen. In the theory which considers the Caucasus as the cradle of the human family, the branch from which the Medes were descended primitively occupied this region. Now it forms a part of Russian Armenia, and the Persian province, Azerbaijan. The writers of classical antiquity, like Polybius and Ammianus, mention an Atropatene as a province of Media proper, and praise its fertility.

ATROPHY (Gr. *a* privative, τροφή, nourishment, τροφία, want of nourishment). This word is technically used to signify the wasting away of any organ or portion of the body from want of nutrition in the part, irrespective of the general nutrition of the body; as the natural decay or shrinking of the reproductive organs in aged persons, even when the body generally may become more corpulent. The principle of vitality decreases in the organ, when the functions are suspended, and nutrition slackens where the vital principle becomes inert. The mammal glands, or milk-secreting organs in the breasts of women who have passed the age of child-bearing, are sometimes so much atrophied that traces of them only can be found embedded in large lobes of adipose tissue or fat.—In man these glands are only rudimentally developed, their functions being never active, and, therefore, they are not, properly speaking, atrophied, but rudimental and inert, which is, in a contrasted view, analogous to atrophy. Another contrast, which is not analogous, but very different, is technically called hypertrophy, or excessive nutrition and enlargement of an organ, or a set of organs, in the body. This also may be natural, where the vital functions are increased for special purposes at times, as in the pregnant womb, the walls of which become enlarged in thickness and distended in volume, to subserve the temporary uses of gestation and parturition.—The active and continuous exercise of any set of muscles in the body, will increase the relative proportions of nutrition, and produce enlargement of the organ, as is seen in the arm of the blacksmith, the leg of the operadancer, and the whole external frame of certain acrobats, wrestlers, and athletes. Such enlargements, however, being normal and continuous, arising from increased exercise and consequent nutrition, are not technically termed hypertrophy; while the temporary enlargement of the pregnant womb, though natural

and normal, being also more or less contingent and accidental, comes within the technical application of the term. In these cases both atrophy and hypertrophy are natural and normal, but in many other instances they are the result of accident or of disease. If any limb or portion of a limb be artificially compressed for a long time, as the feet of Chinese women are compressed in narrow shoes to check their growth, such limb or portion of a limb, deprived of natural exercise and room to grow, will be depressed in its vitality, and lack the power to appropriate nutrition from the blood; it will gradually decay in size and force, and become what is technically termed atrophied. Disease alone, without compression, will cause atrophy in the upper or the lower limbs, or even in the whole body; for many persons waste away from morbid inactivity, which brings on by degrees emaciation and debility, resulting in decay of the whole system.—Paralysis, by preventing natural exercise in the limbs, may depress the vitality of the parts, and diminish their powers of nutrition. This will cause atrophy, or a falling away of the paralyzed limb. The dislocation of a joint neglected, may, by causing pressure on the nerves, cut off a portion of the innervation necessary to maintain the active functions of nutrition in the parts below, and thus depress vitality and bring on atrophy. In children of a scrofulous diathesis, disease in the hip-joint often affects the nerves of the parts and the vitality of the whole limb, diminishing the powers of nutrition, and causing the leg to dwindle in comparison with the one which is not affected. In these cases the atrophy is of a double nature; for the gluteal muscles waste away, and the bones decay in part, before the limb begins to dwindle in its general proportions from the weakened powers of nutrition. Atrophy is always the result of diminished vitality and function, and consequent decrease of the powers of nutrition. The term is generally applied to single organs, limbs, or portions only of the organism, emaciation and decay being used to designate a wasting away of the whole body.

ATROPIA, ATROPIN, ATROPINE (Gr. *atronos*, one of the Fates, whose office it was to clip the thread of human life), a vegetable alkali of highly poisonous properties extracted from the *atropa belladonna*, or deadly night-shade. It is obtained from the juice expressed from all parts of the plant, but more particularly from the leaves. It crystallizes in white silky prisms, which have a bitter taste, but no smell. They possess an alkaline reaction, reddening litmus paper; they melt at 194° F., and are volatilized at 284°. Their composition is carbon, 70.98; oxygen, 16.86; hydrogen, 7.83; and nitrogen, 4.88. The smallest quantity of this substance, applied to the eye, causes dilatation of the pupil, which continues for several days. In this country the juicy extract of the belladonna is more used in medicine than the alkaloid; and

its properties will be found treated of under *BELLADONNA*. Atropia was first obtained by Mein, a German apothecary, by digesting the roots, powdered extremely fine, for several days in alcohol, and afterward separating the other ingredients by various precipitations. From 12 ounces of the root he obtained 20 grains of pure alkali. Chloroform and potassa are also used for obtaining its solution.

ATROPOS, one of the Fates of Greek mythology. She is represented with a pair of scales, or a sun-dial, or a cutting instrument.

ATTACCA, a musical term derived from the Italian *attacare*, to attack, and written at the end of a piece of music to show that the succeeding movement is to be performed without any pause. Thus, *attaca l'allegro* is placed at the end of an *adagio* which is immediately followed by an *allegro*.

ATTACHMENT (Fr. *attacher*, to seize), in law, the seizure of the person or property. The writ of attachment is of 2 kinds: 1. Against the person in the nature of a criminal proceeding for contempt of court. It may be issued against attorneys, solicitors, sheriffs, and other officers of court, for any misconduct or neglect of duty. The object of the attachment is in such cases to bring the offending party personally into court, to answer for the alleged contempt, and unless he can clear himself he is punishable by fine or imprisonment. Jurisdiction has formerly been exercised by courts over a very large class of cases, and no precise limit has been fixed to the power. The statute of New York continues the jurisdiction to the same extent that has been heretofore used. 2 R. S. 534. In the famous case of *Yates* in New York, in 1810, who was committed to prison by the chancellor for misconduct as a master, the question was agitated but not definitively settled whether there was any relief upon habeas corpus from such imprisonment. *People v. Yates*, 4 Johnson's Rep. 817, 4 id. 337. 2. A writ as for contempt to enforce the civil remedies of parties to suits, or to protect the rights of such parties. In the English chancery this was the only process for enforcing its orders and decrees. In this country it has been resorted to by all the courts to enforce interlocutory orders. It is, however, no longer used in New York for the collection of costs or any money demand, except against attorneys, solicitors, and other officers of court. Act of 1847.—Attachment against property was an old mode of proceeding in English practice to compel the appearance of a defendant in an action. To this head belongs also the proceeding known as **FOREIGN ATTACHMENT**, a process under which the property of a foreign or absent debtor is seized. The proceeding had its origin in a custom of the city of London, of which we find some notice in the books as early as the reign of Edward IV. By this custom, an action having been brought in the mayor's court against A, and the suit having

been returned *nilhil* (that is to say, that nothing could be found as a distress to compel appearance of defendant), and thereupon, it being suggested by the plaintiff that another person residing in London is indebted to A, a writ is issued to warn such debtor, who is thereafter in the proceedings called "garnishee," and if he does not deny that he is indebted, the debt is, by virtue of such writ, attached in his hands to answer the judgment which shall be recovered against A. Cowell defines a foreign attachment to be "an attachment of foreign goods found within a liberty or city in the hands of a third person for the satisfaction of some citizen to whom the said foreigner oweth money." But there is no trace of such proceeding in any other place in England than London. This proceeding has been introduced into our eastern states and some others, and is a common mode of collecting a debt due by a non-resident who has property within the state, such property, whether lands, chattels, or debts due to him, being seized at the commencement of the action to satisfy the judgment which shall be recovered. It is sometimes called trustee process, and the person who is indebted or holds property of the non-resident defendant, being designated as trustee. In the state of New York an attachment may, by the code, issue against the property of a non-resident defendant who cannot be served with process, but the proceeding is more simple than the trustee process of the eastern states. There is also a distinct proceeding for the attachment of property of absconding, concealed, absent, or non-resident debtors, which is not an action but a sort of insolvent proceeding for the benefit of all the creditors of the person whose property is attached.

ATTACK, in its general, strategical meaning, is held to signify the taking of the initiative in any particular skirmish, combat, engagement, or pitched battle; in all of which one party must necessarily commence with offensive, the other with defensive, operations. The attack is generally considered the more successful, and consequently, armies acting on the defensive, that is to say, in wars of a strictly defensive nature, often initiate offensive campaigns, and even in defensive campaigns deliver offensive actions. In the former case, the object to be gained is that the defending army, by shifting the place and scene of operation, disturbs the calculations of the enemy, takes him away from his base of operations, and compels him to fight at times and places different from those which he expected, and for which he was prepared; and perhaps, positively disadvantageous to him.—The two most remarkable instances of offensive operations and direct attacks, used in strictly defensive campaigns, occurred in the two wonderful campaigns of Napoleon: that of 1814, which resulted in his banishment to Elba; and that of 1815, which was terminated by the rout of Waterloo and the surrender of Paris. In both these extraordinary campaigns,

the leader, who was acting strictly in the defence of an invaded country, attacked his enemies on all sides, and on every occasion; and, being always vastly inferior, on the whole, to the invaders, contrived always to be superior, and generally victorious, on the point of attack. The unfortunate result of both these campaigns detracts nothing from the conception or the details of either. They were both lost from causes entirely independent of their plan or execution, causes both political and strategical, the principal of which were the vast superiority of the allied means, and the impossibility that any one nation, exhausted by wars of a quarter of a century, should resist the attack of a world in arms against it. It has been said that when two armies are set face to face in the field, that army which takes the initiative, or in other words, *attacks*, has the decided advantage. It would appear, however, that those who have adopted this view, have been dazzled by the splendid achievements of a few great generals, and of one or two great military nations, which have owed their successes to attacks on the grandest scale; and that the opinion requires much modification. Epaminondas, Alexander, Hannibal, Cæsar, and, last not least, Napoleon I., were, emphatically, attacking generals, and won all their great victories, as, in the main, they endured all their great reverses, in actions wherein themselves assumed the initiative. The French owe every thing to the impetuosity of their almost irresistible onset, and to their rapid intelligence in following up successes and converting disasters, on the part of their enemy, into irretrievable ruin. They are by no means equal in the defensive. The history of the greatest battles in the world seems to show that, where the attacked army has solid and obstinate endurance sufficient to make it to resist, unbroken, until the fire of the assailants begins to die out, and exhaustion and reaction to succeed, and can then assume the offensive and attack in its turn, the defensive action is the safest. But there are few armies, or, indeed, races of men, who can be intrusted to fight such battles. Even the Romans, though magnificent in the defence of walled towns, and wonderful in offensive field operations, were never celebrated in the defensive; and their history shows no battle in which, after fighting all day under reverse and on the defensive, they in the end attacked and won. The same is generally characteristic of the French armies and leaders. The Greeks, on the contrary, fought many of their best battles, as those of Marathon, Thermopylæ, Platæa, and many others, but the latter especially, on the plan of receiving the assault until it slackens, and then attacking the half-exhausted and surprised assailants. The same has been the English, and, to a great extent, the Swiss and German system for many ages, and generally successful with those troops, as it has been in later days with the Americans. The battles of Crecy, Poitiers, Agincourt, Waterloo, Aspern and Ess-

ling, and many others, too numerous to be recorded, were fought exactly on the same principle; and it may be added that in the war of 1812-'14, the Americans successfully retorted on the English, who almost invariably attacked them, and that too—contrary to their usual mode—in column, the plan which they had proved to be so valuable against the French, and which they have still more recently proved against the Russians.—The ordinary modes of attack are the following, when two armies are opposed face to face, in the field, and when both intend to fight. First, and simplest, the direct parallel attack, when the assailing force joins battle, at once, along the whole front, from wing to wing, and fights it out by sheer force. Second, the attack by the wings, either on both simultaneously, or on one first and then on the other, successively, keeping the centre retired. This was Napoleon's favorite battle, by which, having caused the enemy to weaken his centre in order to strengthen his wings, while he kept his own centre retired and fortified by immense reserves of cavalry, he finally rushed into the central gap and finished the action with an exterminating blow. Third, the attack by the centre, keeping the wings retired and in reserve. This is the most faulty of all attacks, and has rarely been adopted, and, it is believed, never successfully. If an army be forced into this position, it is generally surrounded and annihilated, as was the Roman attacking army at Cannæ. It is, on the contrary, an admirable position of defence. Fourth, the oblique attack, invented by Epaminondas, and practised by him, with splendid success, at Leuctra and Mantinea. It consists in attacking one wing of the enemy, with one wing secretly and successively reinforced, while the centre and other wing are retired, but are so manœuvred as to threaten a constant attack, and prevent the defending party from strengthening its own weak point, until it is too late. This was the favorite method of the Austrian Clairfait, by which he constantly defeated the Turks; and of Frederic the Great, who was wont to say that "he was only fighting Epaminondas his battles over again," in his own finest victories. It is worthy of remark that the Greeks, the French generally, as well as the Russians and the Austrians, have gained all their best battles by attack of columns; which, when they are not effectually checked and brought to a stand, break through the centre and carry all before them. The Romans, the English, and the Americans, almost invariably, have fought and still fight, whether in attack or on defence, in line; in which formation they have always proved able to resist and hold in check the assaulting column with their centre, until by the advance of their wings they can overlap the enemy's flanks and crush him. It is worthy of remark, that wherever the English have varied from what may be called their national order of attack, in line two deep, and have assailed in column, as at Fontenoy and Chippewa, they have suffered disaster. The

inference is nearly irresistible, that the central attack by column is radically faulty against firm and steady troops, although it is sure of success against an enemy of inferior physique and discipline, especially if he be demoralized in spirit.—In attacking a redoubt or field fortification, if it be defended only by infantry, the assailants may march immediately to the attack; if it be defended also by cannon, it is necessary first to silence cannon by cannon. The cannonade is conducted in such a way as to break the palisades, dismount the pieces, and plough up the parapet, and thus to oblige the defending cannon to be withdrawn into the interior. After the attacking artillery has thus produced its effect, the light infantry, principally riflemen, envelop a part of the work, directing their fire upon the crest of the parapet, so as to oblige the defenders either not to show themselves at all, or at least to fire hurriedly. Gradually the riflemen approach, and converge their aim, and the columns of attack are formed, preceded by men armed with axes and carrying ladders. The men in the front rank may also be furnished with fascines which both serve as bucklers and will assist in filling up the ditch. The guns of the work are now brought back and directed against the assailing column, and the attacking riflemen redouble their fire, aiming particularly upon the artillery men of the defence who may attempt to reload their pieces. If the assailants succeed in reaching the ditch, it is essential that they should in the assault act together, and leap into the work from all sides at once. They therefore wait a moment upon the brim for a concerted signal; and in mounting upon the parapet they are met by howitzer shells, rolling stones, and trunks of trees, and at the top are received by the defenders at the point of the bayonet or with the butt of the musket. The advantage of position is still with the defenders, but the spirit of attack gives to the assailants great moral superiority; and if the work be not defended by other works upon its flanks, it will be difficult, though not quite unprecedented, to repel even at this point a valiant assault. Temporary works may be attacked by surprise or by open force, and in either case it is the first duty of the commander to obtain by spies or reconnoissance, the fullest possible information concerning the character of the work, its garrison, defences, and resources. The infantry are often thrown in an attack upon their own resources, when they must rely upon their own fertile invention, firing the abatis by lighted fagots, filling up small ditches with bundles of hay, escalading palisades with ladders under the protection of a firing party, bursting barricaded doors or windows by a bag of powder; and by such measures decisively and boldly used, they will generally be able to overcome any of the ordinary obstructions.

ATTAINER (Fr. *teindre*, Lat. *tingere*, to stain). In the English law this term was applied to the extinction of civil rights, and the forfeiture of estate which followed, when a

person was condemned to death for treason or felony, or where judgment of outlawry had been pronounced against him for not appearing to answer to a capital crime. It might also take place by act of parliament, called bill of attainder. In the case of high treason, the effect of such condemnation, outlawry, or bill of attainder, was forfeiture of all the real and personal estate of the criminal, and corruption of blood, so as to interrupt hereditary descent of any civil right. For all capital crimes less than high treason, there was a forfeiture of personal property absolutely, but of real estate only the use during life. By stat. 7 Ann, c. 21 (the operation of which was suspended at first during the life of the pretender, and afterward during the lives of his sons, but which suspension was repealed by 39 Geo. 3, c. 93), it was enacted that no attainder for treason should extend to the disinheriting of any heir, or to the prejudice of any person other than the traitor himself. And by stat. 54 Geo. 3, c. 145, in cases of felony (which term designated all crimes punishable by forfeiture of lands and chattels, and to which capital punishment was a usual incident), except in certain specific cases, the person who would be entitled to the lands of the offender upon his death, may enter thereon immediately. In this country the passage of bills of attainder by any state is prohibited by the constitution. By statute of the state of New York, no forfeiture is caused by any offence except upon outlawry for treason, 2 R. S. 701, § 22, and in that case the forfeiture is of lands only for life, of personal estate absolutely, id. 656, § 8.

ATTAIN, a charge of a false verdict, upon which a jury of 24 was summoned to try the attain. At common law this process was used only when the proceeding had been upon a writ of assize, and was probably resorted to only for the purpose of getting the decision of a common jury instead of recognitors of assize, but was afterward extended to all actions, by various statutes. The proceeding has, however, been long obsolete, and was abolished in England by 6 Geo. 4, c. 60. A similar act has been passed in New York, 2 R. S. 421, § 69.

ATTAKAPAS, a large and fertile section of southern Louisiana, including several parishes. Though often mentioned in conversation and in commercial reports, it is not the legal appellation of any subdivision of the state. Great quantities of sugar and molasses are produced in the district and shipped at Franklin.

ATTALA, a county in central Mississippi, which has an area of 630 square miles, and 10,991 inhabitants, of whom 3,412 are slaves. Big Black river forms its western boundary. Its surface is undulating, and the soil, in some parts, fertile. Its name is taken from Atala, the heroine of an Indian romance by Chateaubriand. Kosciusko is the county seat. In 1850 the productions were 5,631 bales of cotton, 632,503 bushels of Indian corn, 112,163 of sweet potatoes, and 130 hogsheads of sugar. There

were 15 churches, 8 newspaper offices, and 590 pupils attending public and other schools.

ATTALUS. I. A Macedonian nobleman, lieutenant of Philip of Macedon, lived about 370 B. C. He was the uncle of Cleopatra, whom Philip married after his repudiation of Olympias. When the marriage of his niece was celebrated, he insulted the young Alexander by offering as a toast an aspiration to the gods for a legitimate heir to the throne. Alexander threw his drinking-cup at the head of Attalus. Philip took the part of his lieutenant, and seized his sword to chastise his son. After the accession of Alexander, he procured the assassination of his old enemy. II. The first prince of Pergamus who assumed the title of king, born 269 B. C., died 197. He was the founder of the celebrated library of Pergamus, second only to that of Alexandria. III. **FLAVIUS PRISCVS**, elected Roman emperor A. D. 409. He was a native of Ionia, and a pagan, but became converted to Arian Christianity, and was christened by a Gothic bishop. He became a member of the Roman senate A. D. 408, at a time when Alaric, king of the Visigoths, was besieging Rome. Attalus was then prefect of Rome, and Alaric, being also an Arian, thought of proclaiming him emperor as a rival to Honorius, then at Ravenna. This was done; but Attalus, acting independently of the barbarian chief in some things, was by him deposed after a few months' reign. After the death of Alaric, Attalus accompanied Ataulphus into Gaul. When in 414 Ataulphus married Placidia, the sister of Honorius, Attalus sang an epithalamium at the marriage. Ataulphus, unable to come to terms with Honorius, proclaimed Attalus emperor once more; but after Ataulphus's assassination, the next Visigoth chief made peace with Honorius. Attalus, left without protection, fled to Spain, was captured at sea, and had the fingers of his right hand chopped off, as a punishment, and in order to prevent him from writing, and was condemned to end his days on the Lipari islands. He was afterward recalled to Rome, where he died in obscurity.

ATTAMAN, is the title of the supreme chief of the Cossacks, but is still retained only by those of the Don. The attaman was elected by the people in a general public meeting; the mode of election was by throwing their fur caps at the favorite, and he who had the largest heap of caps was chosen. In this way the attamans of the Cossacks of the Ukraine or of the Dnieper, were elected, from the very beginning of their free democratic organization. When in the 16th century the Cossacks submitted to the Polish nation, the election of the attamans was confirmed by the Polish king, from whom they received as signs of investiture a standard, a baton of command, and a great seal. After the secession of the Cossacks from Poland and their submission to Russia in the 17th century, the attamans preserved the same rights, and were elected and confirmed according to the former

mode, until the insurrection of the celebrated Mazeppa. After this event the office was suppressed until 1750, when it was restored in the person of Count Razumoffsky. When Catharine destroyed the organization of the Cossacks of the Ukraine, the dignity of attaman was confined to those of the Don. The last elective attaman of these Cossacks was Platoff, often mentioned in histories of the campaigns against Napoleon in Russia, Germany, and France, in 1812-'14. After his death, the emperor Nicholas made the dignity of attaman hereditary in the grand duke, the heir to the empire, and thus abolished the old right of the Cossacks to choose their chief. The commanders of various other Cossack organizations in Russia bear the title of attaman, but only by custom and courtesy. From the word attaman is derived the word *Hetman*, in ancient Poland, the commander of all the military forces of the nation, an office similar to that of grand connetable, in France, previous to the revolution.

ATTAR, or **OTTO** or **ROSEA**, a delicious perfume extracted from the petals of the rose. It is a volatile oil, of soft consistency, nearly colorless, and deposits a crystallizable substance which is partially soluble in alcohol. The best article is prepared at Ghazipoor in Hindostan; but it is apt to be much adulterated with sandal wood and other oils. The whole country, for many miles around Ghazipoor, is a garden of roses, and in the spring of the year presents a most beautiful picture of red and green. The roses are used both for rose water and the oil of roses. The latter is obtained from the rose water by setting it out during the night in large open vessels, and early in the morning skimming off the essential oil, which floats at the top. The rose water after the removal of the oil is not so highly valued as before. It is estimated that 200,000 well-grown roses are required to produce half an ounce of the oil; and the value of this when it is manufactured is about \$40, and even then it is likely to be adulterated. If warranted genuine at the English warehouses it sells for about \$50, or \$100 per ounce.

ATTENTION, the act of fixing the mind, in its thinking, upon any one object or class of objects. It is also used to express the mental state when thus fixed. It is usually said to be voluntary, and is defined by Brown to be perception united with science or volition. Attention, however, considered as a mental state, may be involuntary, as when the mind is absorbed in the contemplation of one subject, even in spite of effort to distract it, by change of scene or employment. The power of fixing the mind in attention is greatly increased by practice. The slightest occurrences distract the minds of those who are unaccustomed to habits of close thinking. The same thing is observable in children. Napoleon could so command his attention to several different subjects in quick alternation, as to be able to dictate dispatches to 8 secretaries at once while he himself penned a 4th. Sir Isaac Newton used frequently to be-

come so absorbed in mathematical calculations that he must be violently shaken, to hear a call to dinner; and Neander, in the intensity of his thought, often forgot to commence his lecture, after he had entered the desk, and the class were in waiting. But these remarkable instances of attention may sometimes be idiosyncrasies. Johnson resolves genius into the power of attention. In attention there is a loss of consciousness, and so of lapse of time, since the succession of ideas is the natural measure of time.

ATTERBOM, PETER DANIEL AMADEUS, a Swedish poet born in the parish of Asbo, county of Christianstad, Jan. 19, 1790, died at Upsal, July 21, 1855. His genius, fostered by the influence of his father, a worthy minister of the gospel, and by excellent educational advantages at Linköping and Upsal, was blended with fervent aspirations for the emancipation of the literature of his country. To free it from the shackles of French, and other corrupt influences, was the ambition which haunted him and some of his fellow-students at Upsal, and found vent in the Aurora association, established by them in 1807, and in a periodical called the "Phosphorus," which they founded a few years afterward. Thus he had abundant opportunities to express his admiration of German (especially of Schlegel and Schelling), and his aversion for French, and modern Swedish literature. This brought him into direct antagonism with many of the conservative academicians, and the literary feud between the two parties was conducted in a spirit so belligerent that bitter feelings began to destroy the peace of Atterbom, who, by his remarkable contributions to the "Phosphorus," occupied a foremost position, and had to bear the whole brunt of the battle. In 1817 he sought relief in a tour to Germany and Italy, and in 1819, on his return to his native country, we find him officiating as German teacher of Prince Oscar, the present king of Sweden. Subsequently, he became connected, as professor, with his own *alma mater*, and the last vestige of his former opposition disappeared in 1839, when he was received as member of the same academy, against which he darted, in the days of his youth, such terrible arrows from the pages of the "Phosphorus." His learning took a wide range, and at the university of Upsal we find him successively giving instruction in history, philosophy, metaphysics, and finally, in 1835, in æsthetics. Among his satirical contributions to the anti-academical organ of his early days, a drama, in prose, entitled *Rimmarbandet*, or, the league of the rhymers, carried the palm. As founder, and for many years editor of the *Poetisk Kalender* (poetic almanac), he exerted a marked influence upon æsthetic culture in Sweden. Some of his most exquisite productions, as, for instance, the "Flowers," appeared in this almanac. He was the first to introduce sonnets and octaves into Swedish poetry. His lyrical poems are contained in his *Samlade*

Dikter (collected poems), published at Upsal, 1836. His *Skrifter* (confessions), 1 vol. 1835, treat of history and philosophy. To blend the spirit of religion with that of the latter science was the aim of his theories. The most important of his other works deals with literature from a historical point of view. It is entitled *Seenaka Siare och Skaldar* (the seers and poets of Sweden), and constitutes, in fact, his most elaborate production. The 6th and last volume of this work appeared in 1856.

ATTERBURY, FRANCIS, an accomplished prelate, and zealous high churchman of England, and a conspicuous figure in the political troubles of the reigns of Queen Anne, and George I., born at Middleton, in Buckinghamshire, March 6, 1662, died in Paris, Feb. 15, 1732. He was educated at Westminster school, whence he was elected to a studentship at Christ Church, Oxford, and in each of these places distinguished himself by his classical attainments, poetical abilities, and imperious and aspiring spirit. His first publication was a Latin version of Dryden's poem of "Absalom and Achitophel," which was quickly followed by an edition of several Latin poems by Italian authors. In 1687 he took the degree of master of arts, and in the same year appeared as the champion of the church of England, then persecuted by James II., and denounced by Roman Catholic writers. The title of his work was "Considerations on the spirit of Martin Luther, and the Original of the Reformation," in answer to a tract of the same title by Walker, the active Catholic master of university college. This work, written in a vigorous rhetorical style, and which first revealed the author's command of contemptuous invective, is ranked by Bishop Burnet among the ablest defences of the Protestant religion. After the revolution of the next year, Atterbury, though by education and conviction a Jacobite, and though his associations at Oxford were only with high Tories, and high churchmen, yet like many other persons of the time who entertained similar views, swore fealty to the government of William and Mary. He soon after entered into holy orders, but continued his residence at Oxford, and became one of the combatants in the critical warfare which was waged between Boyle and Bentley, between Oxford and Cambridge, about the epistles of Phalaris. Charles Boyle, a student of Christ Church, and a nephew of the philosopher Robert Boyle, published an edition of what were termed the letters of Phalaris, an inhuman tyrant of Agrigentum in the 6th century before our era. He provoked the notice of the greatest scholar of the age, Richard Bentley, by an uncourteous allusion to him in his preface. Bentley accordingly issued a small dissertation, in which he adduced abundant evidence that the letters were spurious, that their Greek was palpably the degenerate and feeble Greek of the 3d or 4th century, and that the critical apparatus furnished by the new edition was entirely worth-

less. Bentley was a Cambridge man, and his book was deemed an attack upon the scholarship of Christ Church, Oxford. The men of that college, dispersed over the kingdom, powerful in the professions, in politics, in society, all joined to vindicate the honor of their college. The name of Boyle was retained upon the title-page of the answer to Bentley, but the work itself was the combined effort of all the wit and all the learning which could be mustered among the alumni of Christ Church. The principal champion, however, was Atterbury, and though he knew but little Greek, he yet wrote the larger part of the volume in so skilful a manner that he was esteemed a master of classical learning. Bentley, who would hardly have pardoned the blunders of his opponents in schoolboys, found himself worsted by their intrepid assertions, brilliant rhetoric, and keen and ludicrous personalities. The whigs would have rejoiced in the discomfiture of the tories of Oxford, the Cambridge men would have applauded any thing which looked at all like a victory of their university, but the general voice of the public was in praise of the performance of Atterbury. Bentley spent 2 years in writing an answer, which will always be valuable to the student of Grecian antiquity, and proved, beyond all question, that though Atterbury wrote finely, he was yet wholly ignorant of the subject, and that he was entirely wrong on every point involved in the discussion. Meantime, the restless and ambitious mind of Atterbury had become disgusted with the quiet life at Oxford. He felt himself, he said, "made for another scene, and another sort of conversation." He left the university in 1791, and began to preach in London, where his graceful and powerful delivery, and clear and elegant style, at once rendered him popular, and gained for him an appointment as one of the chaplains of William and Mary. His vehement defence of high church doctrines involved him, during the next 10 years, in a series of controversies. As a member of the lower house of convocation, he sought to raise the power, and extend the privileges of this house, and to make it more independent of the civil power and the episcopal order. He wrote numerous treatises upon the subject, the most important of which was entitled the "Rights, Powers, and Privileges of an English Convocation, Stated and Vindicated," and was in reply to Dr. Wake, afterward archbishop of Canterbury. These pieces were written with acrimony, and exhibit all the artifices of the controversialist, but their ingenuity and ability were acknowledged by his opponents, Hoadley and Burnet. He received the thanks of the lower house of convocation for his services, and the degree of doctor of divinity from the university of Oxford, though he was not then of sufficient standing to have obtained it in regular course. On the accession of Queen Anne, he became chaplain in ordinary to her majesty, and 2 years afterward dean of Carlisle. During the

ascendency of the whig party, he was indefatigably active in the lower house of convocation, of which, in 1710, he was elected prolocutor. In 1710 the famous trial of Dr. Sacheverell took place, and Atterbury signally displayed his talents in turning it to the advantage of the tories. He was thought to have composed, in great part, the eloquent speech delivered by Sacheverell at the bar of the house of lords. The tory party now had in its service the ablest writers of the time, and of these writers no one was more active or effective than Atterbury. Upon the change of ministry which followed, and the elevation of the tories to power, he was rewarded by being made canon of Exeter cathedral, preacher at the Rolls chapel, and in 1712 dean of Christ Church. He was welcomed as the head of his old college with every mark of honor, but his domineering and contentious spirit soon gave great dissatisfaction. His early friend, Smalridge, succeeded him in both his deaneries, and is said to have complained of his lot in being obliged to carry water to extinguish the flames which Atterbury kindled. The latter was soon removed from Christ Church, and made a bishop, as his enemies said, because he was so bad a dean. On Lord Oxford's recommendation, he was promoted to the bishopric of Rochester, to which the deanery of Westminster was then attached. He now aspired to the primacy, and had a vacancy occurred at this time, he would probably have been raised to the archbishopric of Canterbury. But the sudden death of the queen, and the accession of a house known to be partial to the whigs, disappointed all his hopes of further advancement. In the moment of trepidation after the queen's death, he besought Bolingbroke and Ormond to take measures for establishing the pretender upon the throne, and offered himself to proclaim him, in full canonicals, at Charing-cross. No plan, however, had been matured, and Atterbury, who alone was fearless and resolute, declared, with indignation and grief, that "never was better cause lost for want of spirit." He was received with distrust and coolness by George I., and soon evinced his disaffection by refusing to sign the loyal declaration of the bishops during the rebellion in 1715. At the same time he employed all his eloquence in the house of lords in opposing the measures of the court and ministry, and drew up some of the most violent protests against them. He also wrote sparkling and bitter pamphlets for popular distribution. Long suspected of having plotted for the restoration of the ejected family, and of having been, at least, in indirect communication with them, he now engaged directly in a correspondence with the pretender. He was charged by a secret committee of the house of commons with being concerned in a plan for domestic insurrection and foreign invasion. The scheme was well matured, but it came to the knowledge of the English government through the regent of France. The evidence against him was deem-

ed sufficient to justify his arrest and committal to the Tower, Aug. 24, 1792, amid much popular excitement. In the following March a bill of pains and penalties was brought against him, having for its object his deposition and banishment. This bill passed the commons without much discussion, the bishop making no defence in that house, but the contest in the house of lords was long and sharp. Atterbury there spoke for the last time in his own defence, and his powerful and touching eloquence, and firm demeanor, produced a great effect. When the house divided, there were 43 against, and 88 for the bill, and on May 27, the king, it is said, reluctantly signed it. That Atterbury was guilty of the crimes charged against him cannot be doubted, but it has become the general opinion that the matter was judged at the time with partisan vehemence, and that though the proofs which were adduced against him might have been sufficient legally to convict him, yet some of the ancient forms, designed to guard political trials, were dispensed with. Atterbury received the news of his fate with fortitude and composure, and took an affecting leave of the friends whom he loved. On the next day, June 18, he was embarked on board a man-of-war, and conveyed to Calais. Nearly every court of Europe was occupied with the schemes of the pretender, and Atterbury became his ablest and not least active partisan. After residing a short time at Brussels, he fixed his abode at Paris, where he consoled himself in corresponding with eminent men of letters, and became the most discreet and efficient of the promoters of the Jacobite cause. Yet James was not wise enough to put all confidence in his surpassing genius, and Atterbury had too much spirit to be willing to continue counsels which passed unheeded. He quitted Paris, and resided for nearly 2 years in the south of France, cheered by the hope of a visit from his beloved daughter, Mrs. Morice, who was languishing under consumption, but for whom a milder climate was prescribed. The anxious wish of the daughter to see her father once more before she died was vouchsafed her. She met him at Toulouse, was able to share his conversation a few hours, but died in his arms the same night. Atterbury hardly recovered from the heavy affliction. He was recalled in 1780 to Paris by the pretender, and again exerted himself in behalf of a desperate cause, but his stormy life was near its close. At this time he published one of his most admirable letters in reference to a charge made against his edition of Lord Clarendon's history, that noble product of the old monarchy, from which he had derived his own principles of loyalty. He alluded to the coincidence that he and Clarendon were the only 2 subjects of England who had been banished and deprived, by act of parliament, of all intercourse with their countrymen. He lived but a few weeks after this, and his body was permitted to be brought to England and buried in Westminster abbey. Bishop Atterbury was

probably inferior in talents to no one of his contemporaries. Few men have ever written the English language with greater purity or strength. He cherished, while it was in his power, the society of the best poets of his time, and his counsels and conversation were esteemed and sought by them. He was an admirer of Milton, before the merits of that poet had been generally recognized. Pope thus alludes to him :

How pleasing Atterbury's softer hour,
How shined his soul unconquered in the tower!

In his political views he steadily opposed the accession of the house of Hanover; and after taking the oath to that house, he yet intrigued and conspired for its overthrow. Though in his political career and his conduct in controversy he was often impetuous and intemperate, yet his gentleness in congenial society, and his devoted love to his daughter, shed a milder light around his character.

ATTERSEE, or **KAMMERSEE**, a lake in upper Austria, 12 miles in length from north to south, and 8 in width. It lies 40 miles S. W. from Linz. From its northern extremity flows the river Ager.

ATTIA LEX, a law proposed by the Roman tribune, Titus Attius Labienus, 64 B. C., that the Roman people, and not the priesthood, should have the power of appointing to the vacant pontificate.

ATTIC, pertaining to Attica in Greece, or its principal city, Athens, a term denoting the possession of the qualities for which the Athenians were remarkable, as Attic wit, or Attic salt, Attic style, Attic faith.—**ATTIC BASE**, the base of a column, used in the Ionic and Corinthian orders, and by some architects in the Doric.—**ATTIC ORDER**, a kind of order, used over a larger order, to complete the building, never with columns, but with ante or small pilasters.—**ATTIC STORY**, the upper story of a house with small windows, either in or above the cornice.

ATTICA, the name of a triangular peninsula in southern Greece, containing about 1,000 square miles. Its east side is bounded by the Ægean Sea, the west by the Saronic Gulf, and the north by the mountains which separate it from Boeotia and Megaria, viz.: the Cithæron and the Cnecan range, or the Cerata and Parnes, which terminates at the sea on the east. From these mountains branches extend into the interior, dividing the territory into 5 plains. Ægaleos extends from Parnes to the eastern side of the Bay of Eleusis, and with the Cerata forms the Eleusinian and Thriasian plain. Pentelicon, branching from Parnes and Hymettus, separated from Pentelicon by a narrow valley, bounds the plain of Athens on the east and south-east, Parnes on the north, and Ægaleos and the Saronic Gulf on the west. South of Pentelicon, and east of Hymettus, lies the Mesogæa, a midland region, partly a plain and partly a tract of undulating surface. The plain of Marathon, forming part of the Diacria,

lies in the north-east angle of Attica, bounded by Parnes and Pentelicon on the north-west, and south-west, and by the sea on the east. The Paralia, or coast district, embraces the southern portion of Attica, from the promontory of Zoster on the west, round the foreland of Sunium to Brauron on the east. The line of coast from Cerata to a point north of Marathon, is about 120 miles. It is included between $37\frac{1}{2}^{\circ}$ and $38\frac{1}{2}^{\circ}$ north lat., and $41\frac{1}{2}^{\circ}$ and $42\frac{1}{2}^{\circ}$ east long. from Greenwich. Attica terminates south in a mountainous region, anciently called Laurium, famous for its silver mines. It is distributed into 5 natural divisions, the Eleusinian and Thriasian plain, the Athenian plain, the Diacria or highlands, with the plain of Marathon, the Mesogæa or midland, and the Paralia, or sea-coast. The principal rivers in Attica, never more than small streams, are the Cephissus, north of Athens, running across the plain in a south-west direction, the sources of which are in Parnes and Pentelicon; the Ilissus, whose sources are in Hymettus, running south of Athens, in a south-west direction. Two or three small streams flow into the sea on the eastern coast, the principal of which was the Erasinos. The soil of the tillable parts of Attica, though thin and light, was in ancient times made very productive. It is less so now, partly on account of defective agriculture, and partly because the trees have been so generally destroyed, that the supply of moisture is greatly diminished, and the streams have shrunk considerably within their original dimensions. Mt. Pentelicon produced an inexhaustible supply of excellent marble, and its quarries furnished the materials for the principal structures in Athens. They have been reopened in recent times, and a part of the king's palace is of Pentelic marble. Marble was also procured from Hymettus, and from Eleusis. Beside grain and vegetables, Attica produced grapes, figs, and olives, of excellent quality, and the delicious honey of Mt. Hymettus; but she was obliged to depend on foreign supplies for a considerable part of the food consumed by the inhabitants. The commercial genius of the Athenians, early developed by their situation, by the maritime tastes of the people, and by the excellent silver currency furnished from the mines of Laurium, and wisely maintained in its purity, made the importation of articles of necessity and luxury easy. The port of Piræus was one of the busiest commercial cities in the ancient world. The ancient Athenians were very fond of country life, and Attica was covered with pleasant dwellings, well-cultivated farms, and beautiful gardens. The economy of a well-regulated Attic household is charmingly described by Xenophon, in the sketch of Ischomachus. It has been mentioned in the article on *ATHENS*, that the communities or towns of Attica were early united under one constitution. Athens was the capital; and the inhabitants of Attica were politically citizens of Athens, having a right to

assemble in the city and take part in the political, judicial, and legislative proceedings there. The oldest communities of Attica were Cecropia, Tetrapolis, Epacria, Decelia, Eleusis, Aphidna, Thoricon, Brauron, Cytherus, Sphettus, Cephissia and Phalerus. Another division was that into the 4 Ionic tribes, which, under various names, existed to the time of Cleisthenes, who reorganized the popular body into 10 tribes, bearing the names of Erechtheis, Ægeis, Pandionis, Leontis, Acamantis, Ceneis, Cecropis, Hippothoontis, Xantis and Antiochia, from ten of the ancient heroes. In 307 B. C. the number was increased to 12, by the addition of the Antigonias, and Demetrias, in honor of Antigonus and Demetrius. Antigonias was afterward changed into Ptolemais and Demetrias into Attalis. In the reign of Hadrian, the Hadrianis was added to the 12, in grateful acknowledgment of his benefactions to Athens. The tribes were divided into demes (see article on *ATHENS*), small local divisions, of which the number differed at different times, 174, according to Strabo, having been mentioned by Polemo, a writer of the 3d century B. C. About 160 names are known, and the position of a considerable number of them is ascertained. Both tribes and demes had their local and their special affairs, with which the whole body of the people had no particular concern. In all official documents it was the custom to add to the name of a citizen that of his father in the genitive case, and an adverb, designating the deme to which he belonged. Sometimes the name of the tribe was subjoined.—The population of ancient Attica has been variously estimated. According to the careful computation of Boeckh, the whole number, in the time of Demetrius Phalereus, 309 B. C., was 500,000, of whom about 185,000 were free, and the remainder were slaves, making the proportion of slaves to the free nearly 4 to 1. During the Roman period, Attica shared in the fortunes of the capital. Eminent personages, belonging to the nobility of Rome, were fond of having country residences in the neighborhood of Athens. In the middle ages, the condition of Attica was but imperfectly known. It formed part of the *Thema* of Hellas, in the Byzantine empire. During the Frankish domination it was part of the territory of the dukes of Athens. When Greece was conquered by Mohammed II., in 1456, Attica, with the rest of the country, was subjected to the burthens of the administrative system of the Turks. The Timariot system does not appear to have been introduced into Attica. The plain of Athens, as we have seen in the article on that city, was often the battle-ground of the war of the revolution, and the population of Attica was greatly diminished. Since the reestablishment of order in the country, and the organization of the kingdom of Hellas, and especially since the city of Athens became the capital of the country, the population has made decided progress, and a considerable part of the territory has

been brought under agricultural operations. Attica and Bœotia form one of the ten *rotes* or departments, into which the kingdom is divided, and Attica is a diocese. The population of the nome, in 1855, was 95,229, of whom considerably more than half must have belonged to Attica. Modern Attica includes Megaris, and the islands of Ægina and Salamis. The principal places, beside Athens, are Piræus, Liopepsi, Marcopoulo, Keratia, Marathona, Kalamo, Marusi, Menidhi, Chassia, Leosina (Eleusis), Vilia, Megara, Kolouri (Salamis), Ægina (in the island), Angistri. The climate of Attica is moderate and healthful. The aspect of the country is generally somewhat barren, but there are extensive olive groves, north of Athens, and parts of the mountain slopes are tolerably well wooded. Early in the spring, however, there is a wonderful and beautiful outburst of plants and flowers, up to the very surface of the Acropolis. Attica still produces excellent wheat, olives, grapes, and Hymettian honey; and might be made by a judicious system of agriculture, and the wise employment of capital, as productive as in ancient times; so that instead of 50,000, it might support 500,000 inhabitants. The peasantry are, however, an honest and simple-hearted race; not yet well educated, or at all skilful as tillers of the earth. They have none of the modern improvements on their little farms, and few of the conveniences of civilization in their houses or huts. But efforts are making, which must, in a few years, be successful, to diffuse among them practical information, and to raise their condition in respect to the comforts, if not the luxuries of life.

ATTIUS HERODES, TIBERIUS CLAUDIUS, a man of great wealth and accomplishments, born during the reign of Trajan, at Marathon, and hence called Marathionius. He claimed descent from Cærops and Miltiades, though, in his father's time, his family, through misfortune, had fallen into poverty and obscurity, from which they were suddenly raised by the accidental finding of a great treasure. Through this means the father of Attius was enabled to secure for his son the services of the best teachers, and so well did Attius profit by their instructions that he became renowned for his learning and ability, and obtained, finally, the office of tutor of the sons of Titus Antoninus. He studied rhetoric under Scopelian with such success as to win for himself the surnames of the "Tongue of the Greeks," and the "King of Eloquence;" but his literary remains fail to attest the fame conferred by these titles. During a portion of his life he held public office, being at one time eponymos of Athens, at another holding the prefecture of the free cities of Asia. While in these positions he used his immense wealth to construct costly public baths, canals, and public buildings. He married Anna Regilla, a Roman lady, upon the occasion of whose death he carried the demonstration of his grief so far as to overlay all the bright colors of his house with black Lesbian marble.

An inscription upon a statue erected by Atticus to her memory excited much discussion among the antiquarians of the 17th century. —TITUS POMPONIUS, a Roman of the equestrian order, has come down to posterity as one of the most honorable, high-bred, unselfish, and truly cultivated men of that nation. Born 109 B. C., he was a contemporary of Cicero. During the civil wars between Sylla and Marius he spent about 20 years in Athens, and thus perfectly mastered the Greek language, rendering many services to the Athenians, who raised statues in his honor; hence his surname Atticus. Recalled by Sylla in the year 68 B. C., he resided in Rome, and was celebrated for his hospitality, numbering among his friends such men as Hortensius, Pompey, Cæsar, Brutus, and above all Cicero. Agrippa, friend of Augustus, married Atticus's daughter. He had no ambition, never accepted the high offices proffered him; made a generous use of his great wealth, during the civil wars was able to be on friendly terms with all parties, and died at the age of 77, starving himself to death to avoid other physical sufferings. He possessed a very extensive library, and employed his slaves to copy MSS., selling the copies. His annals, a general history, extending over 700 years, are highly prized by classical writers, but have not come down to us. He also wrote several other works, as the "History of Illustrious Roman Families," one on the consulate of Cicero, all of which are lost. His name has been preserved from oblivion by the letters addressed to him by Cicero, and by a biography written by Cornelius Nepos.

ATTIGNY, a very old town in the department of Ardennes, N. E. France, on the left bank of the river Aisne. Though comparatively unknown, it had a great importance under the Merovingian and Carolingian kings, being the summer residence of some of them. Here it was that the successor of Charlemagne, the emperor Louis le Debonnaire, had to submit to a public penance, in expiation of the death of his nephew Bernard, king of Italy.

ATTILA, called by the ancient Germans ETZEL, in the Magyar language ATZEL, son of Mountzouk, was a Hun, of royal lineage. In A.D. 434, with Bleda, his brother, he succeeded Bleda, their uncle, in the leadership of their people. The Huns at that time were established in Pannonia, and extended over ancient Scythia or Sarmatia to the Dnieper and the Don. The 3 brothers threatened to invade the eastern empire, whose emperor, Theodosius II., obtained peace only by a heavy ransom. Very soon the power of these barbarians came to be terribly felt in both Asia and Europe. Attila assured the Huns that he had discovered the sword of their god, with which he was to procure for them the dominion of the world. He called himself the Scourge of God, and his subjects looked on him with superstitious awe. In 444 he ordered the murder of his brother, as a dictate of the divine will, and the fratricide was

celebrated as a victory. In a short time he extended his sway over countless tribes of Germany and Scythia, from the Baltic to the Black sea. The Ostrogoths, Vandals, Gepidas, Heruli, Rugians or Northern Slavi, and the Slavi of the Danube, with many Caucasian, and trans-Volgiens and northern Asiatic nomads, obeyed him. It is even said that he concluded an alliance with a Chinese emperor. He invaded Persia, but being defeated in the plains of Armenia, he turned toward the eastern empire. With an army, which is said to have counted 700,000 men, mostly cavalry, he overran Illyria and all the region between the Black sea and the Adriatic. Theodosius II. was overpowered in 8 successive battles, and Constantinople owed its escape to the ignorance of the barbarians in the art of sieges. Thrace, Macedonia, and Greece were devastated, and more than 70 of the most flourishing cities destroyed. Theodosius obtained peace again only by an enormous ransom. Chrysaphius, one of the eunuchs, and minister of the imperial court, bribed Edekon, a companion of Attila, to murder him. But the murderer confessed his purpose, and Constantinople trembled in fear of Attila's revenge, who, however, only overwhelmed the emperor with bitter reproaches for his treachery, and demanded the head of the minister. About 451 Attila turned west toward Gaul. With a countless army of barbarian tribes, each led by its own chief, he marched through Germany, where, among others, a tribe of the Franks joined him, crossed the Rhine, the Mosel, and the Seine, ravaging countries and destroying cities. Leaving Paris unharmed, he reached the Loire, and encamped under the walls of Orleans. The inhabitants, encouraged by their bishop, Anianus, resisted the first attacks of the assailants, and were soon relieved, on June 14, by the approach of the army of Aëtius, the commander of the Romans, with their allies, the Visigoths, under their king, Theodoric; the Franks, under Meroveus, the Burgundians, the Alani, and other barbarians. Attila retired into Champagne, and took his stand in the Catalaunian plains, where Chalons-on-the-Marne is now situated. Here he fortified his camp, surrounding it with a breastwork of wagons. Attila consulted the soothsayers, and their answer was that he would lose the battle, but the enemy would lose their chief. Not daunted by the prophecy, Attila addressed to his companions a glowing speech, pointing to their enemies, and especially to the Goths, who, as he said, had fled before the Huns from one end of Europe to the other. He spoke of their share in the glorious deeds before them, and of the rewards awaiting the victors. The Huns vociferously demanded to be led on, and precipitated themselves upon their enemies, following Attila, who was the first to throw his javelin. Both the armies fought with incredible rage and obstinacy. Finally, the lines of the Romans began to yield, the king of the Visigoths was slain, and the Huns were almost sure of victory. At

this moment Thorismund, son of Theodoric, who commanded a reserve on some neighboring heights, hurled down his troops with such fury that the Huns, pressed on all sides, could scarcely reach their camp. There Attila ordered all his treasures to be put in a heap, and determined to burn himself on the pile at the last extremity. This was the most inhuman battle ever known in European history; it was fought in the last days of June, and is recorded as the battle of peoples (*Völkerschlacht*). A small rivulet, running through the plain, was swollen to a mighty torrent of blood, in which the combatants quenched their thirst; 160,000 men were left dead on the field. It was said that the spirits of the slain continued in the air their furious struggle, a legend which has been immortalized by the pencil of the German Kaulbach. The victors did not, however, push their good fortune to the extreme. Attila retreated toward Germany, harassed only in his rear and flanks by the Merovingian Franks. Gathering fresh hosts the following year, Attila invaded Italy. He said he had come to take as his bride Honoria, sister of the emperor Valentinian III., who had sent to him a wedding-ring, urging him to claim her, and half of the empire as her dowry. The emperor was frightened, and vain proved the prayers and offers of his ambassadors. Attila destroyed the cities of Aquileia, Padua, Vicenza, Verona, Bergamo, Concordia, whose houseless fugitives found refuge in the lagoons of the Adriatic, and founded Venice. The Huns passed into Liguria or Lombardy, and pillaged Pavia and Milan, and Attila established his camp in the plains of Ambulea, at the confluence of the Mincio and the Po, in the vicinity of Mantua. Nothing could have prevented him from overrunning the rest of Italy. In this camp he received an embassy from the emperor and from the Romans, headed by the pope Leo I. The sanctity of the pope is said to have impressed him, and the chroniclers say the spirits of the apostles, Peter and Paul, appeared to him with menaces, a legend immortalized by Raphael. It is said, likewise, that the companions of Attila were awed by the example of Alaric, king of the Visigoths, who had died shortly after having pillaged Rome, and fearing the same fate for their chief, advised him not to advance toward the holy city. In July, A. D. 452, Attila having concluded a truce, returned to the Danube, meditating for the next year a new invasion of the eastern empire, or, as some maintain, a return to Italy. But he died in 453 in his capital or camp in Pannonia, the night after his nuptials with the beautiful Ildico, whom he had married in addition to the many wives he already possessed. The courtiers found him in the morning struck by apoplexy, and at his feet the weeping and desolated spouse. His body was put in a coffin of iron, over which was one of silver, and a third of gold. He was buried secretly at night together with a mass of treasure and arms, and the prisoners who dug the grave were killed. The

Huns, also, made fearful incisions in their faces, saying that such a hero should be wept with blood. In person Attila was short, with a broad chest, large misshapen head, small, deep-set and piercing eyes, flat nose, and tawny complexion. His movements were imposing and menacing; his voice powerful but agreeable. He was by turns sincere and hypocritical, temperate and dissolute, humane and cruel, just and unjust according to his interests, brave but not reckless, deep in his schemes, quick in execution, undaunted, unscrupulous, irreligious, and terrible in his wrath. His camp, capital, or castle, called Etzelburg, was situated, according to all probability, on the site of the city of Buda, in Hungary. It was an immense edifice of wood, with numerous towers, and surrounded by a wall of planks. The celebrated collection of German poems, known as the *Nibelungen*, is mainly devoted to Etzel or Attila, and to the feasts and pastimes of his court, where the barbarian kings of various tribes resided. The passage of Attila through European history marks the great movement of the northern nations previous to the destruction of the Roman world. Whole tribes changed their residence, and active regions became solitudes, and new occupants poured into them. The empire of Attila broke into pieces after his death, his successors and companions throwing dice for the possession of the various countries and nations.

ATTIRET, JEAN DENIS, a French Jesuit and painter, born at Dole, in the province of Franche Comté, France, in 1702, died at Pekin, China, in 1768. He learned the principles of his art from his father, and had already produced some good pictures, when he entered the society of the Jesuits at Avignon. In 1737 he went to Pekin to pursue his art, at the solicitation of the French Jesuit missionary stationed there, and was employed by the emperor, Kee Lung, to execute numerous commissions. Here he remained during the rest of his life. He produced an immense number of paintings and drawings, mostly in water colors, many of which are valuable from the accuracy with which they depict Chinese physiognomy, dress, and habits, as well as triumphs, festivals, and processions, of an exclusively national character. A series of drawings, representing battles, in which the imperial forces had been successful, were sent to France to be engraved, and so gratified the emperor that he appointed the artist a mandarin, a dignity which he declined.

ATTLEBOROUGH, a township of Bristol county, Mass., 31 miles S. S. E. of Boston, and 11 miles N. N. E. of Providence, R. I. It has very extensive manufactures of jewelry, printed calicoes, metal buttons, and clocks, for which there is abundant water-power by Mill river, which intersects the town. It has a bank and insurance office. Pop. in 1855, 5,451.

ATTOCK, a fortified town of Sindé on the river Indus. It formerly belonged to the Afghans, but was seized by Runjeet Singh, and after

his death and the conquest of Sindé by the British, it passed into the hands of the British. It is a place of military importance, from having been in all ages the crossing place of the Indus, which is here 800 feet wide, of great depth, and with a strong current. By this route invaders of India from the N. W. have made their way into the great peninsula. Nadir Shah, Timour, and Alexander crossed at Attock.

ATTORNEY, one who acts in the place of another. An attorney-at-law is one who acts for another in a suit at law, his office being similar to that of procurator or proctor in the civil and canon law. Formerly every suitor was obliged to appear in person to prosecute or defend a suit, and this is still the law in criminal cases in England; but in civil causes it became the usage to appoint an attorney to appear in the place of the party, which was done by what was called a warrant of attorney. No one but a person having legal capacity could appear by attorney. An infant, married woman, idiot, or lunatic, was not deemed competent to exercise the discretion of making the appointment. There were several important legal incidents to the office of the attorney: 1. Attorneys were recognized as officers of the courts in which they were admitted to practice, and were held amenable directly to the courts for any misconduct. 2. They were also entitled to certain privileges, as exemption from serving on juries, from arrest on civil process during the sitting of any court upon which they were actually attending. 3. The relation of attorney and client was held to be confidential, so that the attorney was precluded from testifying to any private communication made by the client in relation to his business, and this was regarded as the privilege of the client, which the attorney had no right to waive for him. 4. So the attorney was by statute prohibited from exacting any other fees than those prescribed by law. 5. Attorneys were prohibited from engaging in suits upon speculation, that is, for a part of what should be recovered, and also from buying up claims to prosecute. These English statutes have been substantially reenacted in this country in all the states, but in New York some important modifications have been recently made: 1. An attorney may make an agreement with his client for a compensation, at a different rate from what is prescribed in the fee bill, Code, § 803. 2. By consequence thereof, it would seem that the attorney may also make an agreement with the client to take part of the subject in litigation as a satisfaction or security for such compensation, but subject to the supervisory power of the court to prevent any undue advantage being taken by him.

ATTORNEY-GENERAL, a law officer of state in England and the United States. His office in England is to prosecute for the crown in criminal cases, and to file bills in the court of exchequer, in relation to lands or any interest claimed by the crown. Perhaps it would be a

proper definition of the officer to say that the attorney-general represents the crown in all legal matters in which the government is concerned, either as a party as upon indictments, or of pecuniary interest, and that he may be also called upon for advice in any matter involving the rights of the king. He is specially required to examine all letters patent before the issuing thereof. In theory this is for the protection of the crown against any injury to its prerogative. In later times the most common exercise of this supervision is in relation to letters patent for inventions which, under the regulations now existing, affect only the rights of inventors, and the service is a merely nominal one, and the expense to the parties perfectly unnecessary. This officer is first mentioned in English history in the reign of Edward IV.—The attorney-general of the United States is required to conduct all suits in the supreme court in which the United States are concerned, and to give his advice and opinion upon questions of law, when required by the president or by the heads of departments, touching any matters which may concern their departments. He is also a member of the cabinet.—Each of the states has also its attorney-general, whose duties are similar in relation to the state government.

ATTORNEY, POWER OF. This is an authority in writing, constituting a person as attorney or substitute for one who executes the writing, the person thus constituted being generally designated as attorney in part. It is not indispensable that the authority should be given by a formal instrument. A letter of instructions is sufficient to confer the authority, and sometimes it is inferred from the acts of parties without any evidence in writing.

ATTOYAC, a small river of Texas, rises in Rusk county, and flowing south enters Angelina river at the S. E. extremity of Nacogdoches county.

ATTRACTION, the force which brings bodies together, or resists their separation. The most striking example is in the attraction of gravity, which produces the weight of bodies, and which, of course, has been observed from the earliest ages. Magnetic attraction was also early observed in the loadstone. The attraction of electrically excited bodies was a later discovery. The attraction of cohesion is the force which holds together the parts of a body, whether fluid or solid. The attraction of adhesion is that which holds dissimilar bodies together, when brought into close contact. Capillary attraction is the addition of liquid to the inner surface of small tubes. Chemical attraction is the force which holds dissimilar bodies together, and thus generates a third, different from either; as iron rust and oil of vitriol are held together by chemical attraction, and form copperas. For the laws of attraction, see works upon theoretical mechanics; Newton's *Principia*, Laplace's *Mécanique Céleste*, or Peirce's "Analytical Mechanics."

ATTRI, a river of Hindostan, which flows from the southern limits of Thibet, under the name Teesta, through a passage in the Himalayas, and discharges into the main branch of the Ganges at Jafferege. Length, 100 miles.

ATTRUCH, a river of Persia in Khorassan, near the confines of Khiva, which flows westwardly and enters the Caspian, 42 miles north of Astrabad.

ATTUOKS, CRISPUS, a mulatto, or half-Indian, resident of Framingham, Mass., one of the persons killed on the evening of March 5, 1770, in the affray known as the "Boston Massacre." John Adams, in his defence of the soldiers, says: "This Attucks appears to have undertaken to be the hero of the night, and to lead this army with banners. To form them, in the first place, in Dock square, and march them up to King street. They passed through the main street up to the main guard in order to make the attack. Attucks, with his myrmidons, came around Jackson's corner and down to the party by the sentry-box. When the soldiers pushed the people off, this man with his party, cried, 'Do not be afraid of them; they dare not fire; kill them! kill them! knock them over!' And he tried to knock their brains out. . . . He had hardiness enough to fall in upon them, and with one hand took hold of a bayonet, and with the other knocked the man down. This was the behavior of Attucks, to whose mad behavior, in all probability, the dreadful carnage is chiefly to be ascribed." The funeral of the victims of the massacre was attended with great pomp and ceremony. On the occasion the shops of the town were closed, and all the bells were ordered to be tolled, as were those of the neighboring towns. The procession began to move between the hours of 4 and 5 o'clock P. M., the bodies of Attucks and Caldwell (both strangers in Boston) being borne from Faneuil hall, and those of the other victims from the residences of their families,—the hearses meeting in King street, near the scene of the tragedy, and passing through the main street to the burial ground, where the bodies were all deposited in one vault.

ATTWATER, RUSSELL, a soldier of the revolution, and for 4 years, from 1812, a member of the New York senate, born in Cheshire, Conn., in 1762, died in Norfolk, N. Y., in 1851. On his mother's side he was descended from the noble house of Bedford. During the attack upon New Haven by the British, he was wounded, and left for dead upon the field, but recovered, and was employed in the commissary's department through the war. He was the first settler of the town of Russell in New York, in 1805. After the battle of Waterloo he was employed to negotiate the purchase of a large tract of land in northern N. York, where Napoleon's friends intended that he should reside, should he succeed in making his escape, but after the sale was agreed upon, the news arrived that the emperor had given himself up, and the scheme consequently fell through.

ATTWOOD, THOMAS, a composer of music, born in England in 1767, died in 1838. At the age of 16 he attracted the favorable notice of the Prince of Wales, who sent him to Italy to be educated. At Vienna he was the pupil of Mozart until 1786, when he returned to England. His royal patron made him instructor in music to his concert, and in 1795-'96 aided him in procuring the situations of organist at St. Paul's cathedral, and composer to the royal chapel. In 1821 he also appointed him organist of the private chapel at the Pavilion, Brighton. He wrote operas, songs, glees, trios, and, in the latter part of his life, sacred music. His works are marked by knowledge of orchestral effects, and are vigorously and learnedly written. Some of his operas and songs were very popular in their day, although now nearly forgotten.

ATTWOOD, THOMAS, an English political reformer, born at Halesowen, in the county of Salop, Oct. 6, 1788, died March 6, 1856. He was scarcely arrived at man's estate, when he became a member of the firm of Spooner, Attwoods and Co., bankers, of Birmingham. In 1811 he was elected high bailiff, or mayor, of Birmingham, and from that time threw himself into public life. His two first steps were to oppose the renewal of the monopoly of the East India company on its former footing, and to endeavor to obtain an abandonment of the "Orders in Council," and he was mainly instrumental in procuring their revocation, but not until it was too late to prevent the collision with the United States. On this occasion the artisans of Birmingham raised a subscription of £300 among themselves, to present to him a silver cup. In 1815 and 1816 he took up the currency question, opposed the return to cash payments, advocated the American system of small bills, controverted with all his natural ardor the currency ideas of Mr., afterward Sir Robert Peel, and was the founder of what is since known in English financial politics as the Birmingham school of currency economists. In 1825, when the bank of England was on the eve of stopping payment, Mr. Attwood was summoned to London to give to ministers the benefit of his advice. He advised the immediate reissue of £1 notes, which had been withdrawn from circulation in favor of £5 notes, in spite of Mr. Attwood's protests; his advice was now taken, and the £1 notes were issued. In 1829 he planned the political union of Birmingham, for the purpose of throwing open the house of commons to the middle classes. For his services to the cause of parliamentary reform, he was presented with the freedom of the city of London, May 21, 1832, with the following resolution, which sums up in a few words the contemporary opinion upon his services: "That the freedom of the city, in a box made of heart of British oak, be presented to Thomas Attwood, esq., in testimony of the high estimation in which the citizens of London hold his distinguished services in the cause of parlia-

mentary reform, and also the ability displayed by him in uniting the intelligent and industrious artisans, and the inhabitants generally of the midland districts, in the firm but peaceable pursuit of that great national object." Birmingham sent Mr. Attwood as her first representative to the reformed house of commons. He did not make a brilliant figure there, though he represented Birmingham in 8 successive parliaments for 7 years. On Dec. 9, 1839, he resigned his seat, on the ground of ill-health, and his constituents held a public meeting to thank him for his services. From this time until his death he lived in retirement.

ATWOOD, GEORGE, an English mathematician, born in 1745 in the parish of St. Clement Danes, London, died at Westminster in 1807. He was educated at Westminster school, from which, in 1765, he was elected to Trinity college, Cambridge, where he graduated in 1769, third on the list of wranglers. In 1772 he took his degree of master of arts, and for a number of years resided at his college as one of its fellows. He also lectured on experimental philosophy, and other subjects of general scientific interest, before the whole university, with such ability that distinguished men came from all parts of the kingdom to hear him. Among others, William Pitt, then rising into eminence as a statesman, attended Atwood's lectures, and was so impressed with his mathematical powers that he sought his acquaintance, and, upon becoming prime minister, appointed him to the sinecure office of deputy searcher of the customs in London, in order that his services as financial calculator might be secured to the government. The value of these services, at a time when the revenue of the kingdom was a matter of exceedingly nice calculation, was duly appreciated by Pitt, between whom and Atwood a strong friendship existed, which was only interrupted by the death of the great commoner in 1806. Atwood's labors in behalf of government did not interfere with his literary undertakings, and during the last 20 years of his life he published several important contributions to science, among which are a "Treatise on the Rectilinear Motion and Rotation of Bodies," another on the "Construction of Arches," "The Stability of Ships," and a "Review of the Statutes and Ordinances relative to the Assize of Bread." He also gained the prize medal at Cambridge, and received the Copleian medal from the royal society. He was fully versed in the theory and practice of music, for which he evinced so great a liking that, on one occasion, he superintended a concert at Cambridge, in aid of a charitable institution; the most eminent professional performers of the day took part. His books did little to enlarge the sphere of human knowledge, as he lacked the essential ability to handle the differential and integral calculus; but they have done much to diffuse knowledge, especially by their detail of ingenious experimental illustrations of mechanical laws. Atwood's

machine is, in particular, a contrivance to illustrate and measure the laws of acceleration. He died unmarried, surviving his illustrious friend and patron but a few months.

ATUA, in mythology, the general name of the deities of the pagan Maori or aborigines of New Zealand. Each tribe has its own atuas. The atuas are presided over and subordinate to the father of the gods, Mawe, who is the only universal deity or *deus publicus* of the New Zealand race. The atuas are merely *dei patrii*, or local authorities, having no jurisdiction, power, or influence beyond the tribe by whom they are acknowledged, and whose ancestors they are, but supreme and all-pervading within that sphere.

ATYS. I. A beautiful shepherd of Phrygia, whom, according to Ovid, Cybele loved and made her priest, on condition that he should forever preserve his chastity. Atys, however, became enamored of the daughter of the river god, Sangarius, and violated his covenant with the goddess, who, to punish him, afflicted him with madness. Atys attempted to commit suicide, but Cybele interfered, and transformed him into a fir-tree. II. A son of Croesus, king of Lydia. His father having dreamed that Atys would be slain by a spear, detained him at home, and would on no account expose him to any danger. The country of Mysia, however, being infested with a formidable wild boar, its inhabitants entreated Croesus to aid them against their enemy. The king promised to succor them, and the prince urged his father so earnestly to allow him to accompany the hunters, that he at length reluctantly consented. The party proceeded to Mysia, and encountered the boar, but in the act of doing so Atys was accidentally killed by the spear of Adrastus—the very man appointed by Croesus to guard the youth from danger.

AUBAINE, RIGHT or, a mediæval right of the sovereign as regards aliens. The name is derived from *albanus*, *albani*, *albi*, a mediæval corruption of *alibi natus*. The principles of German society and jurisprudence made the full enjoyment of civil and private rights dependent on full citizenship in the community where one was settled. Thus the rights of a stranger were variously limited, and in certain cases he was reduced to the legal condition of a serf or *glebe adscriptus*. In the earliest epoch even natives changing their communal district or diocese were considered as *albi*, and the law was sometimes applied to them. But in the course of time it was strictly applied only to born foreigners, that is, to subjects of another sovereign. Thus the Provençal or the Burgundian was a foreigner in relation to the inhabitants of the Seine or Loire; and a Bavarian residing and dying in Saxony bore the same character. The right of aubaine empowered the sovereign to inherit the property of any foreigner dying without a will or without native-born heirs. This right was principally in use in France, and in its various applications was often exercised in a very oppressive manner by

nobles against settlers on their estates, and in their cities and boroughs. To encourage industry and trade, the kings of France sometimes renounced this right in favor of certain cities, which was the case with Lyons, where foreigners could inherit the property of their relatives who died there. The constituent assembly abolished this right by decrees published in 1790 and 1791. The Napoleonic code re-established it, providing, however, that special treaties with foreign governments might put their respective subjects on an equal footing with Frenchmen in the enjoyment of civil and private rights. Finally, in 1810, the right of aubaine was completely abolished by a special law. Several European governments still preserve the right to deduct a part of all property which is exported from their country by foreign or indirect heirs, or attain the same object by a heavy stamp tax. But special treaties have gradually brought the right of aubaine into universal disuse.

AUBE, a department of France, between lat. 47° 55' and 48° 45'; area 2,351 square miles. It was formed of the south part of the province of Champagne and a part of Burgundy. The surface is mostly level; the soil in the S. E. is productive, but in the remaining portion it is poor. The Seine, Aube, Armançe, and Vannes rivers flow through it. It is divided into the arrondissements of Troyes, Arcis-sur-Aube, Bar-sur-Aube, Bar-sur-Seine, and Nogent-sur-Seine. It is an active manufacturing district in pottery, glass, and tiles. Pop. 265,257.

AUBER, DANIEL FRANÇOIS ESPRIT, one of the most distinguished living composers, born at Oaen in France, Jan. 29, 1784. His father, a print seller at Paris, in prosperous circumstances, allowed him to devote much attention to the study of music, for which he showed an unusual predilection, but which he cultivated merely as an amusement, or an elegant accomplishment. After a brief experience in the mercantile profession in London, which he found utterly distasteful, he returned to Paris, and devoted himself more than ever to his favorite art. A number of little compositions, vocal and instrumental, including a new arrangement of the opera, *Julie*, were produced by him at this time, many of which were performed with applause in private circles. After a severe course of study with Oberubini, he ventured, in 1813, to appear before the public in an opera, entitled *Sejour militaire*, which failed of success. It lacked entirely the grace and originality which had been admired in his previous works, and its reception so discouraged Auber that for several years he abandoned a career in which he had started under such favorable auspices. The death of his father in embarrassed circumstances, however, compelled him seriously to devote himself to his art as a means of support, and in 1819 he produced at the Opera Comique *Le Testament et les Billets-doux*, an opera in one act, which was, if possible, less successful than his previous attempt.

Undiscouraged by this failure, or by the sneers and ungenerous comments of the critics, who declared that his genius had been overrated by partial friends, he wrote *La Bergère Châtelaine*, which was produced in the same theatre in the early part of the year 1830, and completely turned the tables in his favor. All Auber's grace, spirit, and dramatic power appeared in this work, which, with *Emma, ou la Promesse imprudente*, produced the following year, may be considered to have founded the brilliant reputation he has since enjoyed. From this time forward he produced a great number of works, almost all of which were received with favor, while some are among the most successful operas now represented on the stage. An imitator of Rossini at the outset, he gradually acquired greater independence of style, and in *La Muette de Portici* (better known perhaps as *Masaniello*), in which his genius reached its culminating point of renown, he ventured to form a style of his own, to which he has since steadily adhered. In addition to the works mentioned, *Le Cheval de Bronze*, *Fra Diavolo*, *Le Domino noir*, *Les Diamants de la Couronne*, *L'Elixir d'Amour*, *Le Dieu et la Bayadère*, *Gustave*, *La Sirène*, and *Haydée*, are among his most popular operas. Many of them have been translated into English and German, and almost all into Italian, and their melodies are familiar wherever music is known. At the age of 74, Auber is still a vigorous and successful writer for the stage, as *L'Enfant prodigue*, and *Marco Spada*, his two latest works, will show; and it is a fact worthy of note, and of which few examples can be found in the history of musicians, that during the 50 years that he has composed music, his inventive powers seem never to have deserted him. The characteristics of Auber's music are sprightliness, grace, and great clearness and simplicity in their dramatic effects. His combinations are ingenious, if not profound, and his melodies *natives*, and often tender, although rarely pathetic. He has succeeded best in buffo operas, for which Scribe has furnished him with admirable librettos, and which are models of light and graceful composition. It is said that he will never hear his operas a second time, either to avoid repeating his ideas, or, like a conscientious artist, to devote himself at once to new works. Auber is a member of the legion of honor, and of the academy of fine arts, to which he was elected in 1829, and now holds the office of director of the imperial music and *maître de chapelle*, at the Tuileries by the appointment of the Emperor Napoleon III.

AUBERT DU BAYET, JEAN BAPTISTE ANIBAL, a French general, born in Louisiana in 1759, died* at Constantinople in 1797. He distinguished himself in the American war of independence, and, on being, in 1791, elected to the legislative assembly of France by the département of Isère, he took the part of La Fayette against his opponents, and was conspicuous in his support of all measures which were

antagonistic to royalty and to foreign influence in France. Subsequently, he again joined the army, became brigadier-general in 1792, and took an active part in the military operations at Mentz and in the Vendée. Some charges which had been brought against him in reference to the surrender of Mentz, turned out to have been groundless, and under the directory, in 1795, the office of the ministry of war was offered to him and accepted, but after a period of service, some difference of opinion with Carnot induced him to resign. He was appointed French ambassador at Constantinople in 1796, but died shortly afterward very suddenly.

AUBERT DE VITRY, FRANÇOIS JEAN PHILIBERT, a French politician and man of letters, born in Paris in 1765, died in 1849. He distinguished himself in 1789 by the publication of various pamphlets, and a work entitled *Rousseau à l'Assemblée nationale*, which was warmly applauded by men like Bernardin de St. Pierre, Condorcet, and La Harpe. He was an admirer of the Girondists, and attacked the Jacobins, for which he was arrested, but finally recovered his liberty, and subsequently became the principal secretary of the Westphalian cabinet under Jerome Bonaparte. He died in poverty.

AUBIGNÉ, J. H. MERLE D', a Swiss theologian, born in Geneva, Switzerland, Aug. 16, 1794. He is the third son of Louis Merle, a merchant of that city, and is nobly descended on the side of his father, whose father married the daughter of a distinguished French nobleman, D'Aubigné. From this paternal grandmother, Prof. Merle derives his surname (D'Aubigné), by a common Swiss custom. He was educated at Geneva, and after his collegiate course there, went to Berlin to attend the lectures of Neander. He was for several years the pastor of a French church at Hamburg, and afterward the favorite court preacher of the late king of Holland, at Brussels. In 1830 he returned to Geneva. When the evangelical society of Geneva founded their theological school, he was appointed to the chair of ecclesiastical history. As a writer both on theology and church history, but especially in the latter department, he is widely known both in Europe and America. His sympathies seem to identify him more with the Protestant church in England and America, and especially in Scotland, than with his brethren at home. His published works breathe a spirit of earnest devotion, united with a strong adherence to the Protestant faith. His ruling principle of "God in history," he has sought especially to unfold in his "History of the Reformation of the 16th Century," a work which has had an extensive circulation and a great influence both in this country and in Europe. His other works develop the same general thought, though perhaps in a less degree. In his last visit to Scotland (1856), he was presented with the freedom of the city of Edinburgh. Prof. Merle d'Aubigné is a man of enlarged and liberal views, and is never idle, though his health disqualifies him at present (1858) for constant

pulpit service. He has accumulated an ample fortune, and lives just on the outskirts of Geneva, in a villa commanding a fine view of the lake. He has been engaged on his great work "History of the Reformation," according to his own declaration, 24 years. He is now at work on the 6th volume, and there is yet a 7th and perhaps an 8th to come.

AUBIGNÉ, THEODORE AGRIPPA D', a French Protestant soldier and historian, born at St. Maury, Feb. 8, 1550, died at Geneva, April 29, 1630. Having expressed his indignation at the execution of some Protestants at the town of Amboise, he was sentenced to death unless he would abjure his religion. He escaped, and soon afterward took an active part in the siege of Orleans. When the siege was over, he betook himself to Geneva, to prosecute his studies, but on hearing that Condé was about to show fight to the enemies of the Calvinists, he went to join him. His constant activity and valor in the field attracted the attention of Henry IV., who covered him with official distinctions; but the stout partisan frequently gave offence to the court, both in his conversation and in his writings. He produced *Circé*, a tragedy, abounding in blunt sarcasm directed against the king and various members of the royal family. He was banished from the court, but after his recall he did not abate his frankness. After the king's death, he published his first 8 volumes of the *Histoire universelle* of his time (from 1550 to 1601). The 8d volume was seized and burnt by order of Parliament, and he fled to Geneva. During his absence, he was condemned to death, and while under this condemnation, he offered his hand to a Genevese lady of the name of Burlamaqui, who did not hesitate to accept him as husband after he had revealed his dangerous position with his wonted candor. By a former marriage he had one son, Constantine, who became the father of the celebrated Madame de Maintenon.

AUBLET, JEAN BAPTISTE CHRISTOPHE FUSÉE, a French botanist, born at Salon, in Provence, in 1720, died at Paris, in 1778; celebrated for his botanical labors in Mauritius, and in French Guiana, where he added 400 plants to the lists of botanical science. His herbarium was purchased by Sir Joseph Banks, and is now in the possession of the British museum.

AUBREY, JOHN, an English antiquary, born at Easton Piers, Wiltshire, March 12, 1625, died about the year 1700. He inherited a valuable estate from his father, which he wasted in lawsuits, and extravagant expenditure, and was finally supported by the kindness of his friends. His published works are his "Miscellanies," and "The Natural History and Antiquities of the County of Surrey." His writings, chiefly in manuscript, have been of great value to antiquarians.

AUBRIOT, HUGUES, a provost of Paris, in the 14th century, born at Dijon, of low parentage, died there in 1362. Recommended to Charles V., by the duke of Burgundy, he soon

became the first magistrate of the French metropolis. In 1369, by the order of the king, he built the bastille, as a bulwark against the English. Many public works of importance, such as sewers and bridges, were completed under his administration. He incurred the animosity of the university, by the severe punishment he inflicted on some students, who, under the cover of their privileges and immunities, committed disorder. He was charged with the crimes of impiety and heresy, before the ecclesiastical courts, and after a long trial, was sentenced to perpetual imprisonment. He would probably have died in his dungeon, where he was fed on bread and water, if in the beginning of the reign of Charles VI. he had not been liberated by the Parisian insurgents, called *Mailloins*, who desired him for their leader. He seemingly assented to their proposal, but the very same night he escaped from Paris, and returned to his native province.

AUBRY, FRANÇOIS, a member of the French Convention, born at Paris, about the year 1750, died in 1802. In the convention he voted with that nondescript party called the Plain. In 1795 he succeeded Carnot as a member of the committee of public safety, and one of his first acts was to release Napoleon Bonaparte, then under arrest for having had some intercourse with Robespierre. Aubry, as secretary of war, was noted only for his incapacity. Under the directorial government, he entered the council of the 500, and openly conspired against the republic; so that, on the 18th Fructidor, he was condemned to transportation. He succeeded in making his escape from Cayenne, and not daring to return to France, where Bonaparte was in the ascendant, he sought a refuge in England, where he died.

AUBRY, MARIE OLYMPIE, better known as OLYMPIE DE GOUVE, a French woman who acquired some notoriety in the beginning of the revolution. Born about 1755, at Montauban, she early repaired to Paris, in the hope of making herself known by her literary performances. Handsome, impulsive, gifted with a wonderful facility for extemporizing, so much so, that she was able to dictate, like Lope de Vega, a tragedy a day, her plays met with indifferent success. She then turned to politics, and made herself conspicuous. She published many pamphlets, and contributed to the establishment of female societies and clubs, where she frequently gave vent to her eloquence. Governed entirely by fancy and sentiment, she was of course inconsistent in politics, being at one time a revolutionist, and at another a royalist. When king Louis XVI. was arraigned before the national convention, she claimed the honor of being his defender. During the trial, she published a pamphlet, *Les trois urnes ou le salut de la France*, for which she was tried before the revolutionary tribunal, sentenced to death, and executed Nov. 5, 1793.

AUBRY DE MONTDIDIER, a French knight, in the latter part of the 14th century, is known

for the extraordinary manner in which his murderer was discovered and punished. There had been no witness of his death, except a dog which was devotedly attached to him, and which evinced such hatred toward Richard de Macaire, one of the companions in arms of his late master, and pursued him with such persistent barking, that suspicion was aroused; and, according to the usage of the middle ages, the "judgment of God" was ordered, and the man had to fight the dog. This singular combat took place in Paris, in 1871. Macaire was thrown to the ground, and confessed his guilt. This legend, which is far from being well authenticated, is the theme of several ballads and dramas in France and Germany.

AUBURN, capital of the county of Cayuga in N. Y., 174 miles west of Albany, $2\frac{1}{2}$ miles west of Owasco lake, the outlet of which intersects the town; pop. in 1855, 9,476. The city, though it stands on a somewhat uneven surface, is handsomely built, with wide streets. It is the seat of a Presbyterian theological seminary, founded in 1821, with a library of 6,000 volumes. It has 8 churches, a flourishing academy, 5 public free schools, 3 banks, and 7 newspaper offices. The Auburn state prison, which is celebrated for its peculiar system of prison discipline, is a fine, massive stone structure, enclosed by a wall which measures 500 feet on each side and about 30 feet in height. It sometimes has more than 600 convicts, who are employed in a variety of manufactures, the proceeds of which generally are sufficient to defray the expenses of the institution. The Owasco outlet has abundant power, which is employed both in the town and its vicinity in manufacturing cotton and woollen fabrics, carpets, iron, and paper, and in propelling a number of mills.

AUBUSSON, a town of France, in the department of Creuse, celebrated for its manufacture of carpets. This special branch of industry gave a great prosperity to the town during the 17th century, when it is asserted that out of a population of 12,000 inhabitants, upward of 2,000 were directly employed in the carpet trade. Unhappily, most of them were Protestants, so that the revocation of the edict of Nantes inflicted a terrible blow on the city, which from that time decreased in population and wealth; but a reaction seems to have taken place, and for the last 25 years Aubusson has materially improved. Pop. 5,196.

AUBUSSON, PIERRE D', grand master of the order of the hospitallers, or knights of St. John of Jerusalem, and a cardinal-legate of the Latin church, was born at Lamarche, France, in 1423, died July 15, 1503. He is said to have first served in the Hungarian armies against the Turks. In 1444, he accompanied the dauphin, afterward Louis XI., son of Charles VII., in his campaign against the Swiss, and took part in the victory gained over them near Basel. He next repaired to the island of Rhodes, where he was admitted as a knight in the order of St. John. His activity, valor, and energy, soon made him one of

the most prominent members of the order, and on the death of the grand master, Des Ursins, he was unanimously elected as his successor. The latter part of the 15th century was a critical period for Christian civilization. Mohammed II., after taking Constantinople, had seized on Greece, Thrace, Servia, Moldavia, the islands of the Adriatic, and was threatening Italy. Rhodes stood as an advanced post for the protection of the Christian world. Aubusson had it strongly fortified, at the same time forming an alliance with the king of Tunis and the sultan of Egypt. Mohammed sent against Rhodes a fleet of 100 sail, carrying an army of 100,000 men, under the command of the apostate Misach Palseologus. The Turks came in sight of the island Dec. 4, 1479, and began the siege regularly on May 23, 1480. All the defensive measures were conducted with energy, prudence, and indomitable courage. Aubusson was always the first against the enemy, fighting in the most dangerous places and accomplishing wonders. He received such severe wounds that his life was for several days despaired of; but he succeeded, and the Turks were obliged to raise the siege July 27, 1480. Mohammed, enraged at the fatal blow which had been inflicted on his arms, was preparing for a new expedition, which he was to command in person, when he intended to bring no less than 300,000 soldiers against Rhodes, but death prevented the fulfilment of his plan; and thenceforth for years Christian Europe had nothing to fear from the Turks. To this result Aubusson contributed no less by his skilful diplomacy than his prowess. He was active in the intrigues that troubled the court of Constantinople. He received at Rhodes Zizim, or Djem, the brother of Sultan Bajazet, who became in his hands a powerful instrument of influence on the Turkish court. Zizim was first transferred to France, then delivered to Pope Innocent VIII., who rewarded Aubusson with the title of cardinal and the office of legate of the holy see in Asia. Aubusson was certainly the most eminent among the Christian warriors and politicians of his time. Although only the chief of a military order and prince of a small island, he was respected by both the Christian and Mussulman sovereigns. He was regarded, not only by his contemporaries, but also by his admirers in the following ages, as "a man chosen of God among the French to put bounds to the conquests of the infidels," and received the surname of "shield of the Christian church." A stern defender of his faith, he also persecuted the Jews, whom he desired to exterminate from his island.

AUCH, an old city of southern France, department of Gers, the seat of an archbishopric, a tribunal of commerce, an imperial college, and a primary normal school; pop. in 1852, 12,141. In the time of Cæsar it was the capital of the Ausci, and was afterward the metropolis of Novempopulania. Auch has manufactures of thread and cotton stuffs, and carries on a considerable trade, particularly in the brandies of Armagnac.

AUOHMUTY, ROBERT, an eminent lawyer, and first of the American family of that name, died April, 1750, at Boston. He was of Scotch descent, the family holding an ancient barony in the north of Scotland, came to America and settled at Boston early in the 17th century. He was in practice about the year 1719, and was long remembered by the anecdotes preserved of his wit and shrewdness. He also possessed extraordinary talents, and it is said the profession in Massachusetts is indebted to him for the high character it has since maintained. He held high offices in Massachusetts, and when in England as agent for the colony, in 1741, is said to have planned the expedition to Cape Breton. He published a pamphlet, entitled "The Importance of Cape Breton to the British Nation, and a Plan for taking the Place."—ROBERT, son of the preceding, and, like him, an eminent lawyer of Boston. Although without a collegiate education, he was distinguished as an advocate and jury lawyer, among such contemporaries as Otis, Quincy, Hawley, &c. In 1767 he was appointed judge of the court of admiralty, which office he exercised as long as the royal authority was recognized; but in 1776, being a zealous tory, he left the country and went to England, where he died. He was associated with John Adams in the defence of Capt. Preston.

AUOHMUTY, SAMUEL, rector of Trinity church in New York, born in Boston in 1735, died in New York, March 4, 1777. He graduated at Harvard college in 1743, and went to England to study for holy orders. After his ordination he was appointed by the society for the propagation of the Gospel an assistant minister of Trinity church, and in 1764 succeeded to the charge of all the churches in the city. He remained in the city as the revolution approached, although he had made arrangements to visit England with the expectation of being consecrated bishop of New York, and in his ministrations in the church continued as before to read the prayers for the king. When the American army took possession of New York in 1777, this was forbidden by Lord Sterling, but the rector held his ground, although his church was entered by a company of soldiers, with drums beating, and with the threat of pulling him out of the pulpit. He then shut up the church and chapels, and took the keys with him to New Jersey, leaving orders that the churches should not be opened until the liturgy could be read without interruption. New York being again in the British possession, he attempted to return, but a passage was denied him. He then sought by a circuitous route to find his way back on foot, and succeeded after great hardships, only to find his church and parsonage burnt to the ground, and his papers and the records of the church destroyed. The next Sunday he preached for the last time in St. Paul's. The various trials he had undergone brought on an illness which carried him off in a few days.—**SIR SAMUEL**, brigadier-general in the British service and son of the

preceding, born in New York in 1758, died in Ireland, Aug. 11, 1832. He graduated at Columbia college in 1775, and the next year entered the army under Sir William Howe. He was adjutant-general in the expedition to Europe in 1781. In 1788, he was at the siege of Seringapatam in command of a company under Lord Cornwallis. Returning to England in 1803, he took command of the troops ordered to South America in 1806, with the rank of brigadier-general, and in 1807 carried the fortress and city of Montevideo by assault. In 1809, he was commander-in-chief in the Carnatic, and in 1811 took possession in the name of Great Britain of the valuable Dutch colonies of Java and Batavia. On his return to Europe he was put at the head of the forces in Ireland. He had all the qualities of an accomplished military chieftain, and twice received the thanks of parliament, and, after his return from South America, a service of plate and the rank of lieutenant-general.

AUOKLAND. I. WILLIAM EDEN, baron, a British diplomatist, born 1750, died 1814. In 1778 Mr. Eden was employed with Lord Carlisle in the settlement of the rupture between the British government and the American colonies. The period for negotiation had, however, passed, and the colonies declared their independence. He entered parliament and was secretary of Ireland, and was sent to the court of Louis XVI., with which he negotiated a commercial treaty. On the breaking out of the great revolution of 1789 he was sent to the Netherlands as envoy extraordinary, with instructions to use all his abilities to counter-check the new political relations growing out of the revolution. For the manner in which he discharged these duties he was called to an account by the house of commons on his return. He wrote "Principles of the Criminal Law," 1772, and various pamphlets, among others, "State of the Poor in England." **II. GEORGE EDEN**, baron and earl, born Aug. 1764, died Jan. 1849. In 1835, he was sent to India as governor-general. During his administration of this office, the opium war with China broke out. It was during Lord Auckland's government also that the expedition against Afghanistan took place, rendered so disastrous by the imprudence of the civil functionaries and the imbecility of the military commander. (See *AFGHANISTAN*.) Lord Auckland powerfully supported various amendments and reforms in the details of the Indian administration and the adoption of a sounder system of land revenue, the basis of which had been laid by Lord William Bentinck. Lord Auckland's chief personal action was, however, exercised upon a system of native schools, in which the children are gratuitously taught the elements of modern education, with a view to their admission into higher schools, where the successful pupils are trained as public officials. The improved administration of justice, both civil and criminal, also occupied his attention.

In 1841 he was succeeded by Lord Ellenborough, and on his return was created an earl, which title died with him. He was unmarried.

AUCTION (Lat. *autio*, the act of increasing), a public sale, whereat persons openly compete, each offer or bid increasing upon the previous one, and the property being finally sold to him who will give the most for it, the highest bidder. In Holland, and at what are called Dutch auctions elsewhere, this process is reversed, the seller naming a price beyond the value of his goods, which is gradually lowered, until some one closes with the offer, the term auction, as applied to such a sale, being obviously a case of *lucus a non lucendo*, a complete misnomer. Rome, so far as is known, invented the auction, which was at first held for the sale of military spoils among the soldiers behind a spear stuck in the ground, whence it was called *autio sub hasta* (under the spear), or *subhastatio*. The signal of the spear was afterward put up at all sorts of auctions, and the name was retained long after the signal was disused. At auctions in Rome, for which the permission of a magistrate must always be had, a spear was fixed in the forum by a crier, who proclaimed the articles to be sold and furnished the company with a catalogue upon tables. Subsequently sales were proclaimed by trumpet. Bids were made by holding up the fingers. After the death of Pertinax, A. D. 193, the prætorian guards put up the Roman empire at auction, which after a number of bids by Sulpician and Julian, the sole competitors, was knocked down to the latter for 6,250 drachms, about \$1,000, to each soldier.—In England sales "by the candle" or "by the inch of candle," which are still occasionally advertised, derive their name from an ancient practice of measuring the time within which the biddings must be completed by a candle, the highest bidder at the moment the inch burnt out becoming the purchaser. The minimum price at which the owner was willing to part with his property was sometimes put under a candlestick—"dumb biddings:" and in the north of England still occur sales where the bidders do not know each other's offers—"candlestick biddings." A curious kind of auction used, according to an old reporter (1 Dow. 8), to be held by females, who did not speak during the whole sale, but gave every person the moment he bid a glass of brandy, the purchaser being he who received the last glass in a private room. It is a little surprising that a practice, so well calculated to warm up competition, should have become obsolete. In England, a person is sometimes appointed, called the judge of the roup, to superintend the sale and act as arbiter if disputes arise. In modern times sales at public auction are as common as private sales, and are directed in most cases by the law, where it interposes between the owner of property and the purchaser—its object being the protection of those who necessarily put the dis-

position of their estate in the hands of a trustee, as bankrupts or the members of a municipal corporation. The red flag is the ordinary sign of the trade, and the auctioneer, with his hammer, his boisterous "going, going, gone," and his earnest or humorous appeals to the company, is often a very original character. No prejudice appears to exist against him or his business now; but from 1817 to 1831 there was a strong anti-auction feeling in this country, particularly in New York, and upon the part of importers and jobbing merchants. Auctions were charged with furnishing facilities for concealment, smuggling, and perjury, and with being injurious to the growth and prosperity of cities, and it was vainly attempted to induce Congress to pass a law, imposing such a duty upon them as would amount to prohibition. The auctioneer is the seller's agent, and as such has a special property in the goods, a lien upon them or upon the purchase money, where he is authorized to receive it, for his commission, the auction duty, and the charges of the sale. If he exceed his authority, or refuse to give the name of his principal, he renders himself personally liable. In sales of real estate he is usually authorized to receive the deposit, but not the residue of the purchase money. He often receives this deposit as a sort of stakeholder, to be paid over if a good title is made. It is his duty to do his best to possess skill, to pursue the regular course of business, and to comply with all legal instructions. The conditions of sale and the plans and description of the property, particularly if real estate, should be accurately made known beforehand. If printed or written, they control the oral statements of the auctioneer, for, in the words of Lord Ellenborough, "men cannot tell what contracts they enter into, if the conditions of sale are to be controlled by the babble of the auction room." Slight inaccuracies of description do not, but substantial ones do avoid the sale. A bid at an auction may be retracted before the hammer is down, and, in cases where a written entry is required to complete the sale, before that is made. For a bid is only an offer, which does not bind either party until assented to. Fraud upon either side avoids the sale. The employment of bidders by the owner is or is not illegal, according as circumstances tend to show bad or good faith. To employ them in order to prevent a sacrifice by buying in the property, is, except where the sale is advertised, as being "without reserve," allowable. But it is a fraud to use them for the purpose of enhancing the price through a fictitious competition. On the other hand the sale is void, if the purchaser prevails upon others to desist from bidding by appeals to their sympathy or false representations. Mock auctions live by the disregarding of these rules. The only *bona fide* bidders at them are persons unacquainted with the ways of the city, to whom, therefore, articles are knocked down at once. A sentence from the Penny Cyclopædia precisely applies to

this country, particularly to New York: "In many large towns, persons make a trade of holding auctions of inferior and ill-made goods; *barkers* are generally placed by them at the door inviting strangers to enter, and *puffers* are always employed who bid more for the articles than they are worth, and thus entice the unwary. Ineffectual attempts have been made to put a stop to these practices."

AUDE, a maritime department of France, capital, Carcassonne, bordered on the E. by the Mediterranean, area, 2,840 square miles. It is subject to violent gales, the surface mountainous and hilly, the soil generally productive. The canal of Languedoc intersects Aude from W. to E., and the canal of Robine, or Narbonne, crosses the east portion from N. to S. Corn and wine are abundant, and are exported. The Aude, the Lers, the Berre, the Orbien, the Orbiel, and Cesse rivers, traverse this department. It is divided into the *arrondissements* of Carcassonne, Castelnaudary, Limoux, and Narbonne, and has manufactures of woollen cloths, paper, and iron ware, brandy distilleries, salt works, and earthenware. Pop. in 1852, 289,747.

AUDEBERT, JEAN BAPTISTE, a French painter and naturalist, born at Rochefort, in France, in 1759, died in 1800. He studied painting in Paris, and eventually became distinguished for his miniatures. In 1789, having made the acquaintance of Gigot d'Oreux, a man of wealth and some reputation as a naturalist, who possessed a fine collection, he was employed by him to paint some of his rarest specimens. This occupation revealed a new talent in the artist, and a taste for natural history, which soon ripened into an absorbing passion. A journey through England and Holland furnished materials for a number of designs, which appeared shortly afterward in Olivier's *Histoire des insectes*, and astonished naturalists by their correctness of form and color. The artist next undertook the preparation of a series of illustrated works on natural history, on a most extended scale, which unfortunately he did not live to complete. The first of these was the *Histoire naturelle des singes, des makis, et des galopithèques* (Paris, 1800), containing 16 colored plates, and showing an equal facility in the author, as designer, engraver, and writer. The splendor of his coloring had never been equalled, and by certain ingenious processes, such as the application of gold leaf, variously tinted, he was enabled to reproduce the most gorgeous plumage of birds and insects, as near to perfection as possible. His substitution of oils for water-colors, is also considered a great improvement in the art of animal illustration. His next work, *Histoire des colibris, des oiseaux-mouches, des jacamars, et des promerops* (Paris, 1802), is still regarded as the most perfect work on the subject ever published. He then commenced a series of works on birds, *Mammifères*, and man, but died while engaged on the first of them, the *Histoire des grimpeaux et des oiseaux de paradis*, which was fortunately completed from

his designs, by Desray, to whom he had communicated the process.

AUDIENCE, the reception of an ambassador by a sovereign, at court; also a court ecclesiastic in England, held by the archbishop in person.—AUDIENCIA, is the title of the Spanish tribunals of justice.

AUDIFFREDY, THOMAS, a native of Cayenne, in Guiana, who preserved General Pichegru, and other Frenchmen exiled to that country, from starvation.

AUDITOR, a functionary appointed to revise the financial statements of parties accountable either to states, joint-stock companies, or to wealthy private individuals.

AUDIUS, or AUDAX (Syrian Udo), the founder of a religious sect called Audians, which advocated the anthropomorphic doctrine, and was established under rather interesting circumstances. Audius, born at the end of the 3d century, and died in 870, was a Mesopotamian, of singular purity and severity of character. He became disgusted with the Syrian clergy, and on expressing his opinion with more firmness than discretion, he was excommunicated; when a considerable number of sympathizers gathered around him and constituted themselves into a church. But this sect could not long withstand the persecutions to which it was exposed, and died almost at the same time as its founder, who passed the latter part of his life in exile in Scythia, where he converted many pagans to Christianity by the force of his teachings, and the moral beauty of his ascetic life.

AUDLAN, an ancient and influential family, originating in Alsatia, where, in 1274, they were invested with the fief of the town and domain of Audlan. In the time of Conrad III. HERMANN PETER VON AUDLAN distinguished himself by his publication in 1460 of *De Imperio Romano-Germanico*, which was the first attempt in Germany to establish the principles of political jurisprudence.—GROSS VON AUDLAN, who lived about the same time, was provost of the cathedral, the first rector of the newly founded university of Basel, and exerted considerable influence on the councils of Constance and Basel. There are at present 4 families of Audlans, 2 of barons and 2 of counts. The junior branch of the barons and the elder branch of the counts reside in France. The head of the latter branch is Count Felix. The 2 other branches reside in Baden and Switzerland.

AUDLEY, THOMAS (Lord Audley of Walden), lord chancellor of England in the reign of Henry VIII., is supposed to have been born at Earl's Colne, in Essex; he died at his London residence in 1544. Little is known concerning his origin or his early life. In the year 1526 he became autumn-reader in the Inner temple. In 1529 he was made speaker of the house of commons in that long parliament which broke up the smaller religious houses throughout the kingdom. He held successively the offices of attorney for the duchy of Lancaster and king's sergeant. In 1532 he was knighted, and suc-

ceeded Sir Thomas More as keeper of the great seal, and on Jan. 26, 1538, became lord chancellor of England, which office he retained until his decease. Audley presided at the trial of Sir Thomas More, and was speaker of the black parliament. He showed himself at all times the ready and unscrupulous tool of Henry VIII., in enforcing the arbitrary edicts of that monarch, and was richly rewarded in the distribution of the church lands. The priory of the canons of the Holy Trinity, usually called Christ church, in London, with all the real estate of the establishment, and the great abbey of Walden in Essex, fell to his share. The former he altered into a town residence for himself. In 1538 he was created Baron Audley of Walden, and made a knight of the garter in 1540. He left no son, and the barony, consequently, became extinct. He was not, as has been erroneously reported, the founder of Magdalen college, Cambridge, but in 1542 he gave certain lands toward the support of the institution, then known as Buckingham college, which was thereupon incorporated under the name of St. Mary Magdalen.

AUDOUIN, JEAN VICTOR, a French entomologist and naturalist, born at Paris in 1797, died in 1841. In 1824 he established, in conjunction with Messrs. Dumas and Adolphe Brongniart, the *Annales des sciences naturelles*. His early papers on the anatomy of the *insecta*, and especially those on the *annelida*, attracted the attention of Ouvier, Geoffroy St. Hilaire, and Latreille, and led to an intimate relation with these distinguished men. In 1826 he became connected with Milne Edwards in investigations in reference to the *crustacea* and *annelida*. In the same year he became assistant to De Lamarck and Latreille in the *Jardin des plantes*, and on the death of the latter he was appointed professor of entomology in the museum attached to that institution. In 1832 he was one of the founders, and for many subsequent years the president of the entomological society of France. While visiting the north of France in the summer of 1841, for the purpose of investigating the habits of the insects which injure the olive plantations, he exposed himself to wet and cold, which brought on an attack of apoplexy, of which he died.

AUDRAIN, a county in the N. E. part of Missouri; area, 680 square miles; surface level or undulating; soil generally fertile, and superior for grazing; capital, Mexico; pop. in 1856, 6,180, of whom 5,188 were free and 992 slaves. In 1850, this county produced 285,186 bushels of corn, 11,448 of wheat, 76,022 of oats, 1,092 tons of hay, 144,880 pounds of tobacco, and 61,044 of butter. It contained 18 churches, and 460 pupils in the public schools.

AUDRAN, the name of a celebrated family of French engravers, all descending from Louis Audran, an officer of the wolf-hunt under Henry IV., whose son Claude, born in 1592, died in 1677, settled at Lyons and became professor of engraving at the Lyons academy. JEAN, born 1667, died 1756, had his studio in

the Gobelins, and left a number of fine works of art, the most celebrated of which is his engraving of the *Enlèvement des Sabines*, after Poussin.—GIRARD, born at Lyons in 1640, died at Paris in 1708, studied 8 years at Rome under Carlo Maratti, and who, at this early stage of his life, acquired fame, even in Rome, by his engraving of a portrait of Pope Clement IX. Colbert invited him to Paris, where he engraved for the king the best pictures of Le Brun. He was also the author of a work on the proportions of the human figure, published in folio, with 27 plates of ancient statues. He is to this day looked upon as one of the greatest historical engravers that ever existed.

AUDRY DE PUYRAVEAU, PIERRE FRANÇOIS, a French politician, born in 1773 and elected to the chamber of representatives in 1822, as member for Rochefort. He took an active and prominent part in the July revolution. But after having helped Louis Philippe to the throne he soon became a violent opponent of his government and an advocate of the republican party. Pecuniary difficulties also involved him in troubles. In 1835 he brought upon himself an indictment for sedition by an imprudent letter to the prisoners of April, and was condemned to 1 month's imprisonment and to pay a fine of 300 francs. In 1848 he was elected to the constituent assembly by the department of Charente-Inférieure, and, on May 4, made president of that body. Since the reestablishment of the empire he has lived in retirement.

AUDUBON, a county in the S. E. part of Iowa, named in honor of Audubon the ornithologist; area, 680 square miles; pop. in 1856, 288. It is crossed by an affluent of the Missouri.

AUDUBON, JOHN JAMES, the most distinguished of American ornithologists, born May 4, 1780, on a plantation in Louisiana, died in the city of New York, Jan. 27, 1851. His father, who had been an admiral in the French navy, was a man of some cultivation, and encouraged his young love for nature and art. Even as a child, he manifested the strongest disposition for the study of birds; he possessed himself of many feathered favorites; and when any one of them died, he was inconsolably grieved because he did not possess the means of reproducing its brilliant plumage and beautiful form. He began of his own will to draw the birds, and disclosing considerable talent as a draughtsman, he was taken to France to be educated. Placed in the studio of the celebrated painter David, he neglected the higher departments of art, in his earnest love of that peculiar branch of it, in which he afterward became so skilful. He was 17 years old when he returned to his native country, and having become possessed of a fine farm on the banks of the Schuylkill, in Pennsylvania, he was married there to an estimable lady, capable of sharing in his enthusiasm as a naturalist. The leisure of rural life allowed him abundant opportunities for prosecuting his predominant taste. "My rambles," he says, "commenced

with the break of day, and to return wet with dew and bearing a feathered prize was the highest enjoyment of my life." He was then also connected with some commercial speculations, which do not appear to have prospered. His researches into the habits of birds, and his drawings of them, absorbed his attention. Some of these drawings, it may be said for the encouragement of youthful genius, when they were afterward shown to Lawson, who engraved designs for Lucien Bonaparte, the ornithologist, were rejected as unworthy of the burin. He had too much confidence in himself, however, when this occurred, to be dispirited by the repulse, and he continued his labors with as much animation and eagerness as before. A more severe trial befel him, when, after having accumulated a large stock of the most carefully executed designs, he discovered that the whole of them had been destroyed by the mice, which had eaten into the box where they were kept. He was compelled to fill his portfolios anew, but his love of the woods and fields was too genuine and ardent ever to allow him to pine over the fatal incident, or to sink into any morbid feeling of despondency. He worked at his vocation because he liked it, because it was the breath of his life, and it was this impulse, not a vain love of fame, which laid the foundation for that immortal work, the "Birds of America." After 10 years residence in Pennsylvania, he removed to Henderson, in Kentucky, where he again embarked in trade, but not to the detriment of his more genial studies. At the time he went to the West, the entire region, which is now covered with innumerable cities and villages, was quite unsettled, and he was obliged, in order to get to his destination, to float his family and goods down the Ohio river in a small canoe, which he purchased for the purpose. In 1810 he made the acquaintance of the Scotch ornithologist, Wilson, who was then prosecuting his own researches in the American wilderness. The tradition runs that Wilson and Audubon met by accident, when the former, displaying some of the trophies of his own pencil, was utterly astonished to find in a mere backwoodsman of America, living almost beyond the skirts of civilization, a man, whose scientific ardor equalled, and whose sketches surpassed his own. Together they made many a wild tramp through the rough cane-brakes of Kentucky, and into the almost impenetrable forests of the remoter territories. The next year Audubon visited the bayous of Florida, gathering by his rifle and pencil the subjects of what was destined to be his great work. Indeed, scarcely a year passed, at any period of his life, without witnessing some new expedition undertaken, and some new treasure acquired. From the great lakes of the north, to the wildest solitudes of the western prairies, there were few accessible spots which escaped his restless wanderings. In the year 1824 he came to Philadelphia and New York, to make arrangements for the pub-

lication of the results of his labors; and, in the same interest, sailed for England in 1826. He was everywhere received by learned societies and scientific men with the utmost cordiality and enthusiasm. Among his warmest admirers in Great Britain were Jeffrey, Wilson, and Sir Walter Scott; and in Paris, Cuvier, Geoffroy St. Hilaire, and Humboldt. It was honorable to the zeal and appreciation of the foreign public that of the 170 subscribers at \$1,000 each, to his splendid volume, the "Birds of America," nearly one-half came from England and France. This volume was issued in numbers, containing 5 plates each, every object being of the size of life. By Nov. 11, 1828, eleven numbers of the work had appeared, with nearly 100 plates. In 1829 he returned to the United States, to explore anew the woods of the continent. Roaming at will from the coasts of Salvador to the everglades of Florida, he gathered materials for a new work, which he aptly termed his "Ornithological Biographies." In 1832 he made another visit to England, where in the course of 2 years the second volume of the "Birds of America" was published, and a second volume also of the "Ornithological Biographies." An entertaining account of the circumstances under which his several magnificent folios were issued is to be found in the various prefaces. The larger work embraced 4 volumes of engravings and 5 of letter-press illustrations; and to get these through the press, was an exacting and protracted task. In 1833, having returned for the last time to this country, he established himself in a beautiful residence, Minnie's-land, on the banks of the Hudson, near the city of New York, where he commenced a new edition of the "Birds of America," in imperial octavo. This was finished in 7 volumes in 1844. It was during this interval that Audubon exhibited in the hall of the New York lyceum of natural history, a collection of his original drawings—one of the most extraordinary collections, perhaps, that was ever exhibited. It contained several thousand specimens of birds and animals—all of which had been gathered by his own hand—all drawn as large as life by his own hand—and all represented in their natural habitats or localities. A contemporary critic says that it "opened to the spectator all the forests of America, filled with all their many-colored inhabitants." As works of art they were astonishing productions, but they were no less astonishing as evidences of the indefatigable zeal and energy of the man whose single efforts had amassed the vast and varied museum. But Audubon had not merely gathered these objects and painted them; he had laboriously described them, scientifically and popularly,—and had woven into those descriptions innumerable passages of the most exciting personal adventure. Yet, after such prodigious excursions and such incessant labors for the press—enough to have satisfied the ambition and exhausted the energies of any man—his

unabated ardor for knowledge turned at once into a new direction. He projected a work on the "Quadrupeds of America," on the same imperial scale with that on the birds. For this purpose he began, in company with his sons, Victor Gifford and John Woodhouse,—who both inherited much of his talents as an artist, as well as a naturalist,—the same wide and unwearied wanderings which had marked his previous pursuits. But the approach of old age—and he was now nearly 70—induced his friends to dissuade him from the more toilsome and dangerous expeditions which he thought necessary to complete this scheme. A great deal of the labor in respect to the writing was performed for him by his excellent friend, Dr. Bachman, of Charleston, S. C., and he was largely assisted in the other departments by his sons,—yet before the grand work was accomplished, his powers began to relax. He was taken ill, and sank to rest gently, says one who was present, as a child sinks to sweet, refreshing sleep. He was buried in Trinity cemetery, adjoining his latest residence, where a monument, reared by the gratitude and admiration of his countrymen, ought to mark his final resting-place. Audubon's chief claims to the remembrance of posterity will rest upon his unequalled achievements as a practical naturalist; but he deserves a high place in literature, also, for the brilliant episodes of personal experience which enliven his letter-press illustrations. As a man, he was in every way worthy the uniform love and respect with which he was greeted by those who knew him. In person he was tall and slender, but sinewy and vigorous; the expression of his face was ever animated and winning; his manners were extremely gentle; and his conversation full of life and piquancy. He spoke always with a slight French accent, acquired in his youth, but his mastery of his native tongue was otherwise quite perfect. In his written style, he was occasionally too diffuse and ambitious, but he is never obscure, never affected, and never dull. An autobiography of this eminent and original man, promised shortly after his death, has not yet made its appearance; and until it does, the world will not be able to appreciate all the difficulties, the dangers, and the disappointments, which pursued his life of solitary yet heroic and useful endeavor. Mr. Audubon was a fellow of the Linnean and zoological societies of London, of the natural history society of Paris, of the Wernerian society of Edinburgh, of the lyceum of natural history at New York,—and an honorary member of the society of natural history at Manchester, of the royal Scottish academy of painting, sculpture, and architecture, and of many other scientific bodies of less note.

AUERBACH, BERTHOLD, a contemporaneous German author, born Feb. 28, 1812, of Jewish parents at Nordstetten, has made a mark in literature by his "Black Forest Village Tales," which have been translated into several foreign

languages. He had previously written *Gebildete Bürger, Buch für denkenden Mittelstand* (Citizens of Cultivated Minds, a Book for thoughtful People of the middle Classes); *Das Judenthum und die neueste Literatur* (The Jews and Modern Literature); *Dichter und Kaufmann* (Poet and Merchant), and *Spinoza*, a biography with translations. Next to the Black Forest Tales, his most popular publication is an almanac published by him in 1845, and called the *Gottvatermann* (the Godfather), which, somewhat after the manner of Franklin's Poor Richard's almanac, treats all the great and small events of the day in such a naive and colloquial manner, as to attract the lowest, and at the same time with such vivacity and humor as to command the attention of the loftiest minds. He is the author of a novel *Die Frau Professorin* (Mrs. Professor), a collection of tales; *Deutsche Abende* (German evenings), travelling and political sketches; *Tagebuch aus Wien von Latour bis auf Windischgrätz* (Diary written at Vienna, beginning with the cabinet of Latour, and ending with that of Windischgrätz), and a tragedy published in 1850, *Andreas Hofer*. The Vienna Diary has received the compliment of a translation into English. His last work, the *Baarfusler*, which is like his Black Forest Tales, full of his characteristic humor and simplicity, was brought out at Stuttgart in the beginning of 1857. Since 1845, he has resided at Weimar, Leipzig, Breslau, and Dresden. He is a person of fine appearance, and singular sweetness of disposition, with uncommon social and conversational powers.

AUERBACH, HENRICH, born 1482, died 1542, medical professor and senator in Leipzig at the time of George the bearded, duke of Saxony. His real name was Stromer, but he adopted the name of his native town, Auerbach, in Bavaria, and built, in 1580, a large building on the Grimma-street of Leipzig. Auerbach was a friend of Luther, and when the discussions between Luther and Eck took place at Leipzig, he offered to Luther the use of his house and tables. Luther drank there, and according to popular tradition, Dr. Faustus rode out of the cellar of the house upon a barrel, an event illustrated by a painting which still decorates the walls of the cellar, called *Auerbachs Keller*, to this day, from the adopted name of the builder. The scenes which are supposed to have been enacted by Faustus in this cellar, are graphically described by Goethe in his *Faust*, but they may even to this day be realized on the spot, by any person who visits the cellar in the evening. The place is very much like one of the New York or Philadelphia lager-bier saloons, with men singing, drinking, and smoking. Especially during the fair is the place interesting, when the townspeople join the students in the ambition to maintain the jolly and rather diabolical reputation of *Auerbachs Keller*.

AUERSPERG, ANTON ALEXANDER VON, COUNT,

a German poet, whose *nom de plume* is Anastasius Grün, born April 11, 1806, at Laibach, in the Austrian duchy of Carniola, has acquired considerable literary fame by his *Spaziergänge eines Wiener Poeten*, published at Hamburg in 1831. Several previous publications, although not without great merit, have not produced the same powerful impression upon the public mind. Some of his later productions, especially the *Schutt* (Leipzig, 1835), and his *Gedichte* (Leipzig, 1837), are also worthy of much attention. He belongs to the Heine stamp of poets. He has not the remarkable imaginative development of Heine, but, on the other hand, he is free from the reckless cynicism which stamps the productions of that writer.

AUERSTADT, a village of Thuringia, in upper Saxony, 22 miles N. E. from Erfurt, on the road to Leipzig, famous for Davoust's great victory over the Prussian army, under the king and the duke of Brunswick, the latter of whom died on the field, gained on the same day with the battle of Jena, Oct. 14, 1806. Davoust, with 35,000 men, beat 50,000.

AUERSWALD, HANS ADOLF ERDMANN VON, a Prussian major-general, born Oct. 19, 1792, killed by the mob at Frankfurt, Sept. 18, 1848. In his youth he distinguished himself in the French wars, and also enjoyed a high reputation for his scientific attainments, and his liberal political sentiments. In 1843, he was elected as delegate for Lithuania and western Prussia, and as representative of Neisse, in the Frankfurt parliament, where he principally devoted himself to military affairs, in which he advocated a more popular organization of the army. During the Schleswig-Holstein excitement, after the news became known that the truce of Malmö had been ratified by the national assembly, a riot broke out in the streets of Frankfurt, and Auerswald, who happened to pass by in company with Prince Felix Lichnowsky, was mobbed by the people, dragged out from the house where he sought a refuge, shot, and killed almost on the spot. The rage of the people was, however, principally directed against Lichnowsky, who had many enemies, and who also lost his life on this occasion. Auerswald perished, rather because he was in company with the object of their hatred, Prince Lichnowsky, than from any personal ill-feeling toward himself.

AUFFENBERG, JOSEPH VON, baron, a German dramatist, born at Freiburg in 1798, died in 1857. In 1839 he was appointed count-marshal to the grand duke of Baden. He wrote a great number of plays, of which only one, *Louis XI. in Peronne*, obtained much success.

AUGEAN CODEX, an imperfect MS. of a portion of the New Testament, which was found in the monastery of Angia Major, at Rheinau, whence its name. It is an uncial MS. without accents, but having the words separated, contrary to the usual custom of such MSS., and having a dot at the end of each word. It is now in the library of Trinity College, Cambridge, having been purchased by Dr.

Bentley (1718), for 250 Dutch florins. It contains the epistles of St. Paul, both in Greek and Latin, except that the epistle to the Hebrews is in the Latin only, and the first two chapters of Romans and the first 8 verses of the third chapter are lacking in both versions. The Greek version is written in capitals, the Latin in Anglo-Saxon characters, a circumstance which, in the opinion of palæographers, assigns this MS. to western Europe, and to a period somewhere between the 7th and 12th centuries.

AUGEAS, a king of Elis, who possessed a great number of oxen. One of the labors which Eurystheus imposed upon Hercules was to clean the stables of this potentate in one day. The hero was to receive a tenth part of the oxen if he should perform his task. He succeeded in accomplishing it by conducting the rivers Alpheus and Peneus through the stables. But when he demanded the stipulated reward, Augeas refused to give it to him, whereon Hercules slew him and all his sons save Phyleus, whom he made king in the room of his father.

AUGER, a twisted instrument to make large holes in wood. See BORING TOOLS.—AUGER MAKING. To the end of a rod of iron, of the proper length, a piece of steel is welded and forged in the shape to form the lip or cutting edge of the auger. The rod is then heated and twisted, by means of a hammer and swedges, into forms appropriate for the kind of auger wanted. This part of the work does not require exactness as it formerly did, and is easily performed. The roughly-twisted auger is heated again, and placed in a machine, invented by Sandford and Smith, where the twist is made regular, and the auger straightened. This machine consists of a solid horizontal plate of cast iron, over which a similar plate is made to slide backward and forward between proper guides by means of a pinion and rack. The distance between the plates and their angle is regulated according to the size and taper of the auger. What constitutes the novelty of this machine is that to each of the plates are secured two steel rods, called whales, running parallel to each other across the plates, at an angle of about 80 degrees with the line of motion. The auger is placed between the plates nearly at right angle with the whales, the extremities of which are made to enter between the two first twists of the auger. The upper plate is then made to slide, and the auger is rolled between them, and the twist is finished by the whales. The whales are more or less inclined according to the pitch desired for the augers; they are made tapering for making tapered augers, and they are curved on the plate when it is desired to produce an increasing pitch. The twisted parts are brightened by filing or by grinding on the stone. The lip is ground into shape, a handle is affixed, and the tool is ready for the market.

AUGER, LOUIS SIMON, a French writer and politician, born at Paris, Dec. 29, 1773, drowned him-

self in the Seine in a fit of melancholy in Jan. 1829. He displayed, at an early period of his life, a fondness for literary pursuits, and wrote a number of vaudevilles, which, however, were not above mediocrity. Subsequently he became connected as writer and editor with the principal Paris journals of his day, as the *Journal de l'Empire*, *Journal général*, *Spectateur*, *Décade philosophique*. In 1816 he was admitted a member of the French academy, and put at the head of the dictionary of the academy with a salary of 6,000 francs. After the restoration he wrote many political articles for various papers, and especially for the *Journal général*, but ruined the paper by his reputation for venality. His selection for so many important offices, for which his literary attainments did not fully qualify him, was attributed to a desire on the part of the authorities to control his pen, and his unpopularity in the academy became still more marked in 1820, when he was put on the committee of the newly-established political censorship. He also made many enemies by his scorching criticisms; in this manner he gave mortal offence to Madame de Genlis, on occasion of demolishing her book on "Woman's Influence upon Literature."

AUGEREAU, PIERRE FRANÇOIS CHARLES, marshal of the French empire, duke of Castiglione, born Oct. 21, 1757, died June 12, 1815. He was the son of a grocer of Paris, and at an early age entered the Neapolitan army, in which he continued a private until he was 30 years of age, when he quitted the army, and settling at Naples, gained his livelihood by teaching fencing; until, being suspected of revolutionary principles, he was ordered to quit Italy. Entering the republican army of the south, after the revolution, he rose rapidly from grade to grade, by the sheer dint of intrepidity; for he had no military genius, if he had even military talents, which seems to be doubtful—other talent he certainly had none. His manners were rude, coarse, unpolished, almost to the verge of brutality; his avarice was so greedy and shameless, that it passed into a proverb with the army. He was close, sudden, and treacherous, which last quality of his character he showed by betraying two monarchs, within but a few months; and his insolence to the fallen emperor, after his banishment, called forth the scorn and reproach of Napoleon's very enemies. His courage was his only virtue, and that partook, in some degree, of the brutal character of a bull-dog's pluck, rather than of the considerate courage of a calm and high-minded man; he but once displayed talent and skill at Jena, and that so unexpectedly, that the consequences were considered the result of accident, rather than of well-planned strategy. In 1794, he was made brigadier-general in the army of the eastern Pyrenees, and afterward general of division. On the peace with Spain, he was appointed to the army of Italy, and in it served in all its campaigns under Bonaparte. At Lodi, he distinguished himself, but it was after the repulse of the officers in command of his rear at Valette,

that he assailed and stormed the position of Castiglione, in a style, and with a degree of intrepidity, which Napoleon never forgot. In the overthrow of the directory, on the 18th Fructidor, he played the part of Bonaparte's tool, in expectation of the succession of one of the expelled directors; but, being disappointed of his expectations, he affected the severe republican, and on the general's return from Egypt, held aloof from him, until after the revolution of Brumaire, when he was the foremost in the worship of the rising sun. Shortly after the establishment of the empire, he was rewarded with the baton of a marshal, and created duke of Castiglione. In the wars with Austria and Prussia, he greatly distinguished himself, especially at Jena. At Eylau, he displayed unbounded heroism; for, being so ill with a fever that he could hardly sit upright, he compelled his servants to tie him to his saddle, and thus led his column into the thickest of the fight. Being wounded, however, he was compelled to fall back, his men were thrown into disorder, and Napoleon, forgetting the gallantry of the attempt, in the failure of the result, sent him home in disgrace. He was still in disgrace, and unemployed, during the Russian expedition, but subsequently distinguished himself at Leipsic; and when France was invaded in 1814, was intrusted with the defence of Lyons, which he pledged himself to make good to the last; but failing, through want of means, to make good his word, he was unjustly subjected to public censure, and again disgraced. While in retirement at Valence, a proclamation appeared in his name, stigmatizing the emperor as "an odious despot, and a mean coward, who knew not how to die as becomes a soldier;" and, although the authenticity of the document has been denied by his defenders, Napoleon believed in its truth. It is yet doubtful whether this proclamation was issued with the marshal's consent or not, but the weight of the evidence, together with his subsequent conduct, confirms, rather than invalidates the charge. On the passage of Napoleon to his seat of exile in Elba, the fallen monarch met his ex-marshal, on the road near Valence; and both descending from their carriages an interview followed, in which it was observed that Augereau had the bad taste, if not brutality, to wear his helmet in presence of the master to whom he owed all his honors; and which terminated in an altercation discreditable to both parties. On the restoration of Louis XVIII., Augereau gave in his adhesion, received the cross of St. Louis, the command of the 14th division, and was appointed a peer of France. On the return of Napoleon from Elba, he remained inactive until the emperor was actually in Paris, when he would have returned to his eagles, but Napoleon would not trust him, and he received neither command in the army nor seat in the senate. On the second restoration of the Bourbons, he would again have made his peace with Louis, but

finding no encouragement, retired to his seat at Houassaye, where he died of dropsy in the chest.

AUGERON, an aboriginal prince of the Canary islands of the Guanche race, who lived at the end of the 14th century. He was a native of Gomera, and came to Europe before the expedition of Bethencourt. At the court of Don Henrico, king of Castile, he mastered the Castilian and acted as interpreter between the Spaniards and his own race. He accompanied Bethencourt the Spanish conqueror of the Canary islands in 1402, and died at his native islands—remarkable as being the only pure-blooded Guanche whose name has been preserved by history.

AUGIER, EMILE, a French dramatist, grandson of Pigault Lebrun, born at Valence Drôme, Sept. 17, 1820. His first and one of his best dramas is *La Ciguë*, an antique, produced at the Odeon. *L'Aventurière* was produced at the French theatre in 1848. *Gabrielle* followed in 1849. The Monthyon prize of the French academy was adjudged to him, as the author of *Gabrielle*, in 1850. *Le Joueur de flûte* and *Diane*, are less esteemed. In conjunction with the late Alfred de Musset, he has produced *L'Habit vert*, and, with M. Jules Sandeau, *La Chasse au Roman*, and an opera called *Sappho*.

AUGITE, a mineral species synonymous with pyroxene, is also used by Dana to designate a section or group of species of the class of anhydrous silicates. See PYROXENE.

AUGLAIZE, a county in the western part of Ohio; area 899 square miles; pop. 11,888. The soil is fertile. In 1850 the productions were 77,501 bushels of wheat, 289,544 of Indian corn, and 8,669 tons of hay. There were 11 churches, 2 newspaper offices, and 580 pupils attending public schools. Near the western boundary is a reservoir 9 miles in length, formed to supply the Erie canal, and occupying the most elevated site between the channel of the Ohio river and Lake Erie. This county was formed from Allen and Mercer counties, and is named from the Auglaize river. Capital Wahpahkonetta.

AUGSBURG, a city in Bavarian Swabia, between the rivers Wertach and Lech, claims to be one of the most ancient among the German cities. Augustus, having conquered the Vindelicians, 12 B. C., established there a colony called Augusta Vindelicorum, on a spot according to some already inhabited and called Damasia. The Huns destroyed it in the 5th century; and during the wars between Thassilo, duke of Bavaria, and Charlemagne, it likewise suffered much. In 1276, having become rich by trade and industry, the city bought its freedom from the duke of Swabia, and became a free imperial city. Its prosperity increased continually. It was the principal emporium for the trade between northern Europe, the south and the east, previous to the discovery of America and the doubling of the Cape of Good Hope. Its merchants, such as the celebrated Fuggers, possessed vessels on all seas then

known. Its greatest prosperity was toward the end of the 15th and the first part of the 16th century. The arts had there their focus, and the Holbeins and other names known in German history belonged to it. After the war against the Smalcald union the decline of Augsburg began. Many diets and tournaments have been held there. On June 25, 1530, the Protestant princes submitted there to Charles V. the confession of their faith, which bears in history the name of the "Confession of Augsburg." In 1555 was concluded there the religious peace between the emperor and the Protestants. Thus the principal events of the reformation are connected with the name of this city. At the dissolution of the German or the holy Roman empire, Augsburg lost its privileges as a free city, and became incorporated into Bavaria. It is now a chief town of the districts of Swabia and Neuburg, and is the seat of various superior, administrative, judicial, and clerical boards; numerous manufactories yet flourish there; lithography, printing, and the book trade are still the pride of the city. In Augsburg is published the *Allgemeine Zeitung*, and in the first part of this century almost all the celebrated German names in science and literature found a publisher in the house of Cotta, established at Augsburg for more than 60 years, and for a long time the first, and still one of the foremost publishing establishments of Germany. Augsburg possesses a large public library, which is increasing daily. The collection of various manuscripts, records, and official documents in the archives of the city, is of great importance for the history of the reformation. Pop. 83,000.

AUGSBURG CONFESSION. Charles V., on his accession to the throne of Germany (1530), found his new dominion the theatre of religious dissensions. He immediately summoned Luther to the diet of Worms (1521), and issued an edict of outlawry against him soon after. But the insurrection in Castile, and the war with France and Italy, called Charles into Spain, and thus diverted his attention from the Lutheran schism. The edict of outlawry was inefficiently enforced, owing to a general wish for a Roman Catholic reform by a large number of the clergy and princes, and the influence of the Lutherans was permitted to increase during the 9 years of the emperor's absence, almost without official attention. The Diet of Spire (1529) had issued a decree for the purpose of conciliating the Lutherans to the proposed Roman Catholic reform, and uniting them against the Sacramentarians and Anabaptists. The Lutherans protested (hence Protestants), and made an unsuccessful effort to unite with Zwingli. At this juncture, Charles returned (1530). The circumstances of his kingdom, both religious and political, demanded prompt attention. The German princes and estates were summoned to convene in diet at Augsburg in June. The summons was conciliatory, and called for aid against the Turka, making no ref-

erence to the religious difficulties of the kingdom, further than to promise at no distant time a speedy adjustment of them. On the 25th of the month, a confession, prepared by Melancthon, and approved by Luther, was presented and read by Dr. Christian Bayer in the diet. This confession is said to have been prepared on the basis of the Swabach and Torgau articles, although these had been drawn up (1528-1529) in the attempt to unite with the Zwinglians, and the object of the present confession was to become reconciled to the Roman Catholic reform party. A copy of the confession, in German and English, was delivered to Charles. These copies are not now known to be in existence. Two days after the reading of the confession, it was delivered to the Roman Catholic theologians for a reply. The reply was read in the diet on the 8d of August following, and called forth from Melancthon a defence (*Apologia Confessionis*), which was afterward enlarged and published in Latin, and then in German. The object of the Augsburg Confession was not attained, and the edict of the emperor (Sept. 22) gave the Lutherans until the following April to bring themselves into conformity with the requirements of the church, and required their coöperation with the throne against the Zwinglians and Anabaptists. The Augsburg confession and Melancthon's defence were generally circulated in western Europe, and became a sort of rallying point among the reformers.

AUGUR, HAZEKIAN, an American sculptor, born Feb. 21, 1791, at New Haven, Conn., where he died Jan. 10, 1858. In early life he produced several works of statuary, of which his "Jephthah and his Daughter," in the Trumbull gallery of Yale college, is the best. In addition to his skill as sculptor, he possessed much mechanical genius. His most celebrated achievement is his invention of the carving machine, which is at the present day in general and successful operation.

AUGURS, diviners among the Romans. We have very clear indications that the practice of divination existed among the Chaldeans and Egyptians in the time of Moses, in the case of the Egyptian magicians who competed with Aaron in the working of miracles, and the instance of Balak sending for Balaam, who is generally considered to have been a Chaldean priest. Chaldea is probably to be regarded as the cradle of this practice, which very soon became a profession, and had certain rules empirically determined. We are not sufficiently acquainted with Chaldean magic to enable us to describe with any great degree of accuracy the means and manner of its divinations. But of one thing we are certain, the earliest form of Chaldean magic was astrology, and the recent discoveries in Chaldea and Susiana by Mr. Loftus carry back the existence of this practice to a period very near that of the deluge. In Ur of the Chaldees Abraham dwelt with Terah his father, and tradition says that Terah was a maker of images. But image-worship in Babylonia cer-

tainly was subsequent in time to that of star-worship. From Chaldea this cultus passed into Egypt, and from Egypt to Greece, whence the Romans received it. But meanwhile, the superstition of each nation through whose hands it had passed, had added something both to the extent of its province, and the code of rules by which it was governed. In Greece and Rome, where we have more definite knowledge of its condition as an art, and its connection with the religious and political history of the people, astrology proper had ceased to have the importance in augury which it had maintained in Chaldea, while, as the word augury itself would indicate, the pre-eminence had been given to omens taken from the flight of birds. The word augurs is derived from *avigerium*, and the prevalent character of Roman augury is still more clearly indicated in that nearly synonymous and more ancient term auspices. Some heavenly phenomena were still observed, enough to preserve a recognition of the origin of augury; but this origin is perhaps as clearly demonstrated in the universal reference to the cardinal points of the compass, on which nearly every thing in the art of augury, both among the Greeks and Romans, depended. The Greek augurs always faced the north, while the Roman augurs faced the south. Omens in the east were generally lucky, while those in the west were unlucky. Hence the Greek had his right hand synonymous with good fortune, while the Roman gave that honor to the left. Later in Roman history, when the Greek literature passed with Greek arms into Italy, and augury had at the same time declined in power over the Roman mind, sinister became a synonyme for bad fortune, and dexter for good. Auguries were made both from the flight and cries of birds. The reason of the superstition of ascribing wisdom to birds is generally supposed to be that on account of their free and rapid locomotion, as well as from their elevated position, they could see many things occurring in different places of which men must be ignorant. Beside, certain birds were sacred to the gods. From birds perhaps the transition was easy and natural, among a superstitious people, to fowls which do not fly. Hence chickens were made use of, especially in war, to divine from. But celestial phenomena were, meanwhile, not altogether disregarded in Grecian and Roman augury. Lightning was especially observed by the augurs, and any other striking phenomena, such as meteors, winds, eclipses. The reason for the decline of astrology proper, as an element of Roman and Grecian augury, may have been that an apprehension of the control of law in the motions of the heavenly bodies, had begun to pervade the mind of the masses of the people, and thus to take away from sidereal phenomena the notion of that immediate presence of an invisible agency, which is often attributed to what appear to be chance occurrences or spontaneous movements. Hence it was that the direction in which a bird flew, the crowing of a cock, the line of the electric flash, and the

manner in which a cooped and starving chicken picked his corn, being apparently purely spontaneous actions, came to be in later times the prominent haruspical elements. Still beyond these, were some even more trivial and accidental occurrences, which were reckoned as ominous; such as an animal crossing one's path, a fit of sneezing, or sudden melancholy, the spilling of salt on the table, or of wine upon one's clothes. And it is remarkable that in proportion to the frivolous and accidental character of the incident has been its hold on the popular mind as an element of augury. Indeed, the portion of that ancient system of divination which has reached down to our day consists in the shreds and patches of salt spilling, sneezing, and dropping of forks, and seeing the new moon over one's shoulder, as good or bad signs. The power of the Greek and Roman augurs was very great. They held their offices for life, regardless of character. They were at first 8 in number, and were chosen one from each of the 8 tribes of the patricians. Cicero says that Romulus, who was himself an augur, associated 8 with himself in the office. This would make 4, and would also seem to intimate that the supreme functionary of the state held the rank of augur *ex officio*, but this was probably the case only in the first instance. For the manner in which the augurs were chosen afterward would seem to preclude the idea that any person was admitted by virtue of any other official function. The number of the augurs is said by Livy to be dependent upon the number of the tribes. If this were the case, then the number must always have been 8, or some multiple of 8. But Livy himself admits that prior to the passage of the Ogulnian law the number of augurs was 4. The reason of this is probably to be found in the fact that the tribes Ramnenses and Titienses being composed of the older colonies of Ramnes and Sabines, had greater civil power than the Suoerenses or Etruscans, who were colonized later, and therefore the Suoerenses were disfranchised in the augural college by the other 2, who elected 2 augurs each. Or it may be that the Ramnenses, being prior to both the other 2, had the right of 2 augurs, while the remaining tribes had one each. However this may be, the augurs were at first elected by the *comitia curiata*, a patrician assembly, until the Ogulnian law which admitted the plebeian element, and enlarged the number of augurs first to 9, then to 15, and a 16th was added by Julius Cæsar. Meanwhile, previous to this, every election must be ratified by the college itself. This power of veto afterward gradually resulted in the usurpation by the college of the right to elect its own members by cooptation (452 B. C.), which right they retained, with the exception of the first election of plebeian augurs, for 850 years, until the passage of the Domitian law, which removed the power of election to the tribes. But with all the restraints which were gradually imposed upon the encroaching tendencies of the augural college

as an element of civil power, it had an important influence in the Roman state throughout its entire existence. The most authoritative enactments of the *comitia* were repeatedly annulled by the entrance of an augur into the assembly, pronouncing the potent words *alio die*, and their independence of the patrician and even of the royal power, is well illustrated in the contest of Attus Nævius, an augur, with Tarquinius the Elder, who compelled the emperor to modify his original purpose in deference to the augural college. For a long time the contest between the patricians and the plebeians was unfavorable to the success of the democratic element, on account of the superstitious veneration with which the plebeians regarded the auspices, and even had they obtained the higher magistracies, while the augural college remained closed to them, they never could have achieved an equality with the patricians. The order of augurs existed until the time of Theodosius the Great, whose edict for the total abolition of paganism throughout the empire, was issued A. D. 391. From the time of the admission of the plebeian element to its privileges 300 B. C., it had gradually declined. Still, so great was the hold of this superstition upon the popular mind, "that a Christian bishop, in the 14th century, found it necessary to issue an edict against it."

AUGUST, a month of the year, derived from the Roman calendar. The Romans called this month originally, Sextilis, or the 6th month of their year, which began with March. Julius Cæsar made it 80 days in length, and Augustus increased it to 81. As it was the month in which Augustus Cæsar had entered upon his 1st consulship, had celebrated three triumphs in the city, had received the allegiance of the soldiers who occupied the Janiculum, had subdued Egypt, and put an end to civil war—the senate, in order to flatter him, changed the name of the month into Augustus, in the same way that Quinctilis had been changed into Julius in the preceding reign. The Flemings and Germans have adopted the word August as another word for harvest. Thus *oogst maand*, is the harvest month; so the German *Augst-wagen*, a harvest wagon; and the Dutch *Oogsten*, to gather corn from the field. The Spaniards use the verb *agostar*, to gather in harvest, and the French and Spaniards have the phrases *faire l'agout* and *hacer su augusta*, to signify harvesting. The Saxons in Britain named August the weed month. The old Germans named it *Wein-koch*, the wine-press month. The mythological representation of August is that of a naked man with wildly streaming hair, holding up to his mouth with both hands a drinking horn; at his side are a bundle of peacock's feathers, 3 melons, and a large drinking vessel.

AUGUST, the name of various German princes. I. WILHELM, prince of Prussia, brother of Frederic the Great, and general of the Prussian army, born at Berlin, 1732, and died in 1758. He took an active part in the Silesian

campaign, and distinguished himself at the battle of Hohenfriedberg (in June, 1745), but owing to the fatal retreat of Zittan, in 1756, he incurred the displeasure of his brother, and withdrew from the army. This conflict between the two brothers led to a correspondence, which was published in 1769. II. EMIL LEOPOLD, duke of Saxe-Gotha and Altenburg, successor to the throne, April 20, 1804. He was twice married, and the first marriage left him issue, one daughter, who became the reigning duchess of Saxe-Coburg, and died in 1822. By the second marriage he had no children, and on his death he was succeeded on the throne by his brother, Frederic IV., with whose decease, Feb. 11, 1825, the line of Saxe-Gotha became extinct. Duke August Emil Leopold was a favorite of Napoleon, and his duchy enjoyed perfect immunity from the burdens of French invasions and French wars. He was a man of taste and considerable literary talent. III. FRIEDRICH WILHELM HEINRICH, Prince of Prussia, born Sept. 19, 1790, died July 19, 1843, at Bromberg, the son of Prince August Ferdinand, the brother of Frederic the Great, who died in 1813. He inherited a large fortune of his father and of his brother Louis Ferdinand, who perished at the battle of Saalfeld, in 1806, and was considered one of the richest men in Prussia. He left various children bymorganatic marriages. He took an active part in the campaign against Napoleon in 1806, by whom he was taken prisoner, and detained in Paris until after the peace of Tilsit. On his return to Prussia in 1813, he resumed his duties in the Prussian army, fought at Dresden, Ulm, and Leipsic, distinguished himself during the campaign of 1814, on various occasions, and bore throughout his life the character of a gallant soldier and an upright man. IV. PAUL FRIEDRICH, grand duke of Oldenburg, born in 1788, died Feb. 27, 1858, mounted the throne May 21, 1829, under the title of grand duke, which had been conferred upon his family, by the congress of Vienna; but of which his father had never availed himself. When Oldenburg was invaded by the French, in 1811, he accompanied his father to Russia, where his younger brother (born in 1784, died in 1812) was married to the grand duchess Catharine. He distinguished himself so much in the Russian war, especially at the battle of Borodino, that in 1813 he was appointed governor of Revel. His reign, after his return to Oldenburg, was marked by political and material progress. In 1880, he concluded a treaty with Prussia for the annexation of Birkenfeld to the Prussian-Heesian Zollverein, and a reciprocal treaty of navigation. In 1886, he prevailed upon Hanover and Brunswick to make satisfactory arrangements for the regulation of excise duties. In 1881, he laid the foundation for a constitution of Oldenburg, which was ratified in 1848, and which, although modified in 1852, still secures much civil and religious freedom to the people. In 1817, he married the princess Adelaide, of Anhalt-Bernburg, who died in

1820, leaving him two daughters, Frederica, and Amalia; the latter, in 1836, married to King Otho, of Greece. In 1825, he married the sister of his first wife, Ida, who died in 1828, having borne him a son. In 1831, he married for the third time, Cecilia, the youngest daughter of the former king of Sweden, Gustavus IV. Adolphus, who died in 1844, also leaving a son. He was succeeded by his first son Nicholas Frederic Peter, the present grand duke of Oldenburg.

AUGUSTA, a county nearly in the centre of Virginia, and forming part of the great valley that extends along the N. W. base of the Blue Ridge. It was distinguished for its loyalty to the revolutionary cause, for which it was commended by Washington. It was set off from Orange county in 1788. The surface is elevated and uneven; the soil, which is drained by the source of the Shenandoah and James rivers, is calcareous, and productive of grain and grass. Its staples are corn, wheat, oats, hay, and butter. It produced more hay in 1850 than any other county in the state, except Rockingham, and more butter than any other except Loudon. The productions for that year were, 419,006 bushels of wheat, 505,800 of Indian corn, 250,026 of oats, 15,285 tons of hay, and 275,483 pounds of butter. There were 41 churches, and 745 pupils attending public schools. A great part of the valley rests on beds of limestone, and extensive beds of anthracite coal have been opened. The celebrated Weyer's or Wier's cave, Madison cave, and the Chimneys, are in this county. In 1850, its real estate was assessed at \$8,763,059; in 1856, at \$10,211,914; showing an increase of 16 per cent. Capital, Staunton. Pop. in 1850, free white, 18,983; free colored, 574; slaves, 5,063; total, 24,610; in 1840, 19,628.

AUGUSTA, a city, seat of justice of Kennebec county, Maine, and capital of that state, on the Kennebec river, on the western side of which the main portion of the town stands, above and removed from the river, upon the banks of which is the business quarter. On the east side of the river, which is spanned by a bridge 520 feet long, is the U. S. arsenal, surrounded with tastefully ordered plots of ground. This building contains a large supply of arms and munitions of war. By the construction of a dam 584 feet in length, across the Kennebec, just above the city, an enormous power has been produced for manufacturing purposes. By this means the navigation of the river north of Augusta has been made easy. Among the noticeable places in Augusta, is a hospital for the insane, which overlooks a landscape of peculiar beauty. Augusta has 9 churches, and a flourishing female academy. It has also 8 or 9 hotels, 4 banking houses, and several manufactories of cotton and woollen goods. It was settled in 1754. Pop. in 1854, 10,000.

AUGUSTA, a city of Georgia, capital of Richmond county, the eastern terminus of the Georgia railroad, and the head of navigation on

the Savannah river. On the completion of the railway, which superseded the previous traffic by wagons, Augusta declined, but within the last few years has greatly advanced in every respect. It is a handsome city, well built, with wide, straight streets, and connected by a bridge over the Savannah, with Hamburg, South Carolina. The Augusta canal, 9 miles in length, brings the waters of the Savannah near the city, some 40 feet above the level, and thus affords inexhaustible power for factories. Augusta contains a fine city-hall, a medical college, 14 churches, a hospital, arsenal, 6 banks, and supports 6 newspapers. It communicates daily with Savannah by steamboats. Pop. in 1857, 17,000.

AUGUSTA, JOHANN, a Bohemian theologian, born at Prague, 1500, died Jan. 15, 1575. He studied theology at the school of Kolow-Koranda. On his death, Augusta went to Wittenberg, and entered into close communion with Luther and Melancthon, without in all points of discipline agreeing with them. He became later a minister of the sect of Bohemian Brothers, and was employed by both that sect and Luther to bring about a reconciliation between the Bohemians and the German Protestants. In consequence of this understanding, the Bohemian Brothers refused to cooperate with the arch-duke Ferdinand, in the Smalcaldic war against the Protestants; a contumacy which Ferdinand avenged after the war was over, by banishing the whole sect, and arresting the principal preachers. Augusta, in the garb of a peasant, was taken in chains to Prague, and thrown into prison. The Catholics accused him of wishing to put the elector of Saxony upon the Bohemian throne; he denied this charge. His liberty was offered to him if he would make a public recantation, and become a Catholic, or a Utraquist. He refused, and remained in prison 16 years. The death of Ferdinand (1564) released him, but he was obliged to promise not to preach again.

AUGUSTA HISTORIA, the name given to a series of Roman biographers of the emperors from the accession of Hadrian to the death of Carinus, the predecessor of Diocletian. They cover a period of 167 years. The writers included in this collection are six in number, namely, *Ælius Spartianus*, *Julius Capitolinus*, *Ælius Lampridius*, *Valerius Gallicanus*, *Trebellius Pollio*, and *Flavius Vopiscus*, of Syracuse. Some editors have included others, as *Eutropius*, and *Paulus Diaconus*. There is a break in the *Augusta Historia* in the absence of the lives of *Philippus*, *Decius*, and *Gallus*. The Bipont edition is the best.

AUGUSTAN AGE, the Latin literary epoch of the reign of the emperor Augustus Cæsar. During this period Cicero, Horace, Ovid, Virgil, Catullus, Tibullus, and other writers flourished; also great patrons of literature like Mæcenas. The purest Latinity belongs to the authors of the Augustan age. In English literature it was common in the last century to apply the phrase

"Augustan age of English literature," to the times of Addison, Steele, Swift, and Defoe, and the writers during the reign of Queen Anne. The *siècle d'Auguste* of French literature is the latter years of the reign of Louis XIV. This metaphor has no modern application beyond the literature of France and England.

AUGUSTENBURG, a place of 800 inhabitants, on the island of Alsens, belonging to Denmark, and known as the residence of the ducal family of Holstein-Sonderburg-Augustenburg. —John, a brother of King Frederic II. of Denmark, established the ducal line of Holstein-Sonderburg, and Ernest Gunther (1609–1687), a lineal descendant of John, was the founder of the collateral line of this house, named above. His successors were: Frederic William (1668–1714), Christian Augustus (1696–1754), Frederic Christian I. (1721–1794), Frederic Christian II. (1765–1824), and Christian Charles Frederic Augustus, the present duke, born July 19, 1798. —A younger brother of Frederic Christian II., Charles Frederic Augustus, born in 1768, was, in 1809, elected heir to the throne of Sweden, but died by accident in the same year. —The dukes of Augustenburg have generally led the life of rich noblemen, and their name would have no special place in history if the probable extinction of the royal line of Denmark had not brought them forward as legitimate successors to the throne in the duchies of Schleswig and Holstein. In 1846 Christian VIII. of Denmark, in anticipation of the extinction of his own royal line, issued a manifesto proclaiming the integrity of the whole Danish kingdom. He did so contrary to all existing laws of succession, the female line being entitled to succeed in Denmark, but not so in the duchies. The case was exactly analogous to that of Hanover, which, on the accession of Queen Victoria to the throne of England, escheated to the duke of Cumberland. This *coup d'état* of Christian VIII. was followed up by various measures intended to entirely amalgamate the German duchies with the Danish kingdom. The people of Schleswig Holstein rose, in 1848, to maintain their independence, and were supported for some time by the German powers, while the revolutionary and national feeling, awakened by the events of that year, was still strong. The duke of Augustenburg and his younger brother (Frederic Ernest Augustus, prince of Roer, born Aug. 27, 1800), naturally desirous of vindicating their right of succession, took a prominent part in this movement, and, at a time when no very nice distinctions were drawn, got credit for enlarged and liberal political views. But they were neither more nor less than pretenders, anxious for their own advancement, and using the popular feeling merely as an instrument of their ambition. Thus they did much more harm than good to the cause of the duchies. They used every means to separate the cause of the dynastical independence of the duchies from that of popular liberty, while,

in reality, the latter was the only source of strength to the former. By scheming diplomacy, the duke of Augustenburg aided in suppressing the popular movement in 1851, vainly hoping that the great powers of Europe would recognize his rights. His hopes were destroyed by the act of England, which, as many have thought, pursued a policy contrary to her own interests, by siding with Prussia in subjecting the duchies to Denmark. He was treated by the Danish government as a traitor, was excluded from the partial amnesty granted in 1852 to the participants in the movement of 1848, and his estates were confiscated. In 1852 he sold all his claims, including the right of succession to the Danish crown, for 2 million dollars, but his brother immediately protested against this transaction, insisting on the hereditary title of the Augustenburg line to the duchies. It was believed at that time, as it is now, that the duke, when closing his arrangement with Denmark, was acting unfairly, having had full knowledge of his brother's intentions. However this may be, the Augustenburgs are still considered as legitimate pretenders—and when, in 1856, new complications arose, in consequence of the attempts of Denmark to crush out even the last remnants of provincial independence in the duchies, the name of the duke of Augustenburg was again mentioned as one intimately connected with the ultimate solution of this question. Since his banishment from Denmark, he has principally resided on his estate at Primkenau in Silesia, where, toward the close of 1857, he was visited by the duke of Saxe-Gotha, a fact widely commented upon as one among many indications of the duke of Gotha's desire to put himself in a prominent position as a candidate for the imperial throne of Germany, if another revolution should accomplish the objects of those who are striving for the reconstruction of German nationality.—The duke of Augustenburg has 2 sons, viz.: Frederic Christian Augustus, born July 6, 1829, and Frederic Christian Charles Augustus, born Jan. 22, 1831.

AUGUSTI, JOHANN CHRISTIAN WILHELM, a German theologian, the grandson of a Jewish rabbi, convert to Christianity, was born in 1772, at Eschenberga, in Gotha, and died at Coblenz, in 1841. He studied at Jena, and subsequently became professor of philosophy and oriental languages in that university. In 1811 he accepted the charge of theology in the university of Breslau; in 1819, he was appointed chief professor of theology in the newly established university of Bonn; in 1837, he was placed at the head of the ecclesiastical affairs of the Rhenish province of Prussia by being appointed director of the consistory of Coblenz. Augusti was one of the most voluminous theological writers of Germany. The most important of all his works, is the *Denkwürdigkeiten aus der christlichen Archäologie*, 12 vols. 8vo, Leipsic, 1817-'81. As an oriental scholar he occupied not the highest, but yet an

eminent position. Although Augusti joined the so-called critical or philosophical school of theology, his mind was on the whole not much inclined to speculative investigation. He was an orthodox Lutheran in doctrine, and during the last 40 years of his life, a zealous advocate of the established form of religion.

AUGUSTIN, or AUSTIN ST., archbishop of Canterbury, sometimes called the apostle of the English, born probably in the first half of the 6th century, died at Canterbury between 604 and 614. He was a Benedictine monk, in the monastery of St. Andrew, at Rome, when he was selected by Pope Gregory I. with other monks, to convert the Saxons of England to Christianity. He landed in the dominions of Ethelbert, king of Kent, in 596, was hospitably received and allowed to preach to the people, although the king himself steadily refused to forsake the gods of his fathers. The influence of his wife, a Christian princess, aided by the preaching of Augustin, finally prevailed, and he was baptized, after which the efforts of the missionaries were crowned with complete success, not in Kent alone, but throughout the whole Saxon heptarchy. The ascetic habits of Augustin and his brethren, a reputation of miraculous power in the restoration of sight and even of life, which he had acquired, the example of the king, and the fact that the southern races of Europe which had embraced Christianity, were far before them in civilization and prosperity, made a deep impression upon the Saxon people, never very devotedly attached to their national religion, and their conversion seems to have been very general—so much so indeed that it is said that 10,000 persons were baptized in a single day. Much of this success is undoubtedly due to the sagacious manner in which the prejudices of the Saxons were humored by Gregory and Augustin. Their temples, instead of being destroyed, were simply dedicated to the new faith and used as churches, and many of their rude festivals, at which good cheer was indulged in freely, were converted into religious feasts, without losing their original social character. Augustin, it is said, allowed no coercive measures to be used in propagating the gospel; but probably the policy adopted by himself and his master rendered them unnecessary. His success caused him to be appointed by the pope archbishop of Canterbury, with supreme authority over the churches of England. The see of York was soon after established, and a number of other bishoprics. Augustin wished to establish conformity of religious customs over the whole of England, and for that purpose appointed several conferences with the British bishops of Wales, who were successors of converts of the 2d century, and had declared their independence of the church of Rome, which, however, failed of any result. The British church refused to conform in discipline or doctrine with the new church, or to unite with it. A number of Welsh monks were soon after put to death, and Augustin has

been charged with the deed, but on no very good authority. His relics were preserved in the cathedral at Canterbury.

AUGUSTINE, AURELIUS, saint, and doctor of the Latin church, was born Nov. 18, 354, at Tagaste, a small town of Numidia, in Africa, not far from Carthage. His father, Patricius, was a pagan nobleman of moderate fortune, while his mother, Monica, also sainted by the church, was from the beginning an earnest and sincere Christian. Her prayers and efforts were untiring that her son might grow up in the faith which she cherished. The natural gifts of the young Augustine soon became evident, and parental fondness gave him full opportunity for improving them. He was sent to the best schools of Madaura and Carthage, and set to study in the principal branches of pagan culture. If we may trust the strong self-accusation of his book of "Confessions," his conduct at this period of his life was far from exemplary. He was led astray by evil companions and bad passions and the seductions of city life, wasted much of his time in follies and rioting, and loved profane amusements. His studies, too, chiefly in the heathen poets, were more favorable to the development of his fancy and his style than to his Christian growth. The death of his father, which threw him upon his own resources, and the influence of some philosophical works, especially the Hortensius of Cicero, roused him from his irregular life to a diligent and hearty search after truth. Unable to find this in the writings of the Greek and Roman sages, and quite dissatisfied with what seemed to him the crude and fragmentary teachings of the Jewish and Christian Scriptures, he adopted the most recent form of Oriental theosophy, which bore the name of Manes the Chaldean. The mystical phrases, the sounding generalities, the profound speculations, not less than the pure morality, of this form of dualism, captivated the young rhetorician, while his spiritual pride was flattered in belonging to so select a society as that of the Manichean brethren. His distinction as a teacher in the schools of Tagaste and Carthage could not distract his mother's thoughts from the misfortune of his heresy. For the 9 years which he passed as the friend of this delusion, she did not cease to labor for his rescue. Dreams and prodigies came to sustain her sinking hope. She was encouraged to pray and weep for her son. And though at last she had the satisfaction of knowing that he had tired of the new philosophy, and had become sick of its empty pretensions and its superficial men, one of whom bore the name of Dr. Faustus,—she could mourn that neither her own prayers nor the warning death of a youthful friend, could turn the heart of the philosophic doubter to the Christian scheme of salvation. At the age of 29, weary of astrology and philosophy, of the arts and pleasures which had thus far moved him, weary, too, of his mother's entreaties, yet still greedy of fame, Augustine crossed the great sea to the city of Rome. His hopes were realized, and in a short time his reputation as a teacher of eloquence rivalled that of the great Symmachus, then at the height of his renown. The younger and the elder masters of oratory became friends. And when the summons came from Milan, at that time the emperor's residence, for a teacher of rhetoric, Symmachus had no hesitation in sending this friend, whom the hollowness of effete Roman paganism had already disgusted. At this time Ambrose was bishop of Milan, and Augustine's first care was to hear and to know so famous a preacher and so great a man. The natural result was a conversion to Christ. But this did not take place at once. Only after repeated interviews, prolonged conversations, severe conflicts of soul, the strife of passion with conviction, and many providential occurrences, such as the song of a child from a neighboring house, the conversion of his own youthful son, an offspring of sin, the happy presence of his watchful mother, the accidental reading of a passage from St. Paul's epistles, did his obstinate heart yield to Christian persuasion, and his reason consent to the faith of his childhood. The history of his conversion forms the most touching and striking chapter in his "Confessions." After 8 months of seclusion, which he spent with his mother and brother, and son, in a rural retreat, preparing for his confirmation in the church, and maturing his plans for the future, Augustine returned to Milan, and in the Easter week of the year 387 was baptized, together with his son and brother, by the hand of Ambrose. He at once set out on his return to Africa. On his way he was called to part with his mother, and he describes in affecting words his anguish at committing her remains to the ground. A small chapel among the ruins of Ostia, marks the traditional spot of her burial. The death of his son, which took place soon after his return, deepened his grief, and confirmed his inclination to the monastic life. He retired to Tagaste, and passed nearly 8 years in a studious and prayerful seclusion, varied only by occasional visits to the neighboring towns. On one of these visits, when he was present in the church at Hippo, a sermon which the bishop Valerius delivered asking for a priest to assist him in his church, turned all eyes toward this famous scholar. No refusals were allowed, and Augustine was ordained to assist at the altar in the priestly office. Preaching soon was added to his duties, an exception being made in his case to the usual rule, and the periods of the African orator in harsh Latin, or the harsher Punic tongue, were received with that vehement applause which honored the golden-mouthed bishop in the pulpit of Byzantium. Souls were converted, rich men moved to give, and popular tumult subdued, by the overpowering pathos of Augustine's plea. Soon the priest was called to be assistant bishop, and then by the death of the elder prelate, the whole charge of the church of Hippo was in-

trusted to his care. He retained the office until his death—a period of 85 years—discharging its duties with a zeal, a fidelity, a vigor, which were the wonder of all the Christian world. The details of his extraordinary episcopal life are minutely related by his friend Possidius, whose admiration of the great teacher knew no bound. We learn that he preached every day and sometimes twice in the day; that he was frugal in his domestic arrangements withal, being a strict ascetic, requiring of his attendant priests and deacons an equal simplicity of diet and dress; given to hospitality, yet without display; very reserved in his intercourse with the female sex, though like Jerome, he founded and gave rules to a convent of women; warmly interested in every kind of charity, whether private alms or vast hospitals; courteous in his bearing, welcoming even infidels to his table; bold against all wickedness and wrong, whatever the rank of the transgressor; untiring in his visits to widows and orphans, to the sick and the afflicted; a foe to all show and ostentation, either in dress or in piety; firm in his exercise of authority, yet mild in his rebukes; taxing his slender physical strength by the severity of his studies, yet omitting no necessary active work; challenging, by his multiplied labors as a writer, a preacher, a philanthropist, and a magistrate, the admiration of the whole Christian world. Every sect of heretics found in him a most fearless and persevering adversary. He disputed with Manichæans, with Arians, with the followers of Priscillian, of Origen and Tertullian, with the powerful and violent party of the Donatists, with the monk Morgan, whose surname of Pelagius gave title to the second great heresy in Christian history, and with many of the disciples of this man, and allowed no doubtful utterance of doctrine to pass without his questioning. To his industry in controversy must be added his vast and multifarious correspondence with emperors and nobles, with doctors and missionaries, with bishops in every quarter of the world, on questions of dogma, of discipline, and of policy—his solid works of commentary, criticism, morality, philosophy, and theology, and even his poetry, for to him are attributed several of the sweetest hymns of the Catholic anthology. The titles alone of the works of Augustine make a long catalogue, too long to be given here. The single volume of "Sermons" contains nearly 700 pieces, shorter, indeed, and less ornate than the celebrated sermons of Basil and Chrysostom, but justifying Augustine's reputation for sacred oratory. The volume of "Commentaries on the Psalms" is more rich in practical remarks than in accurate learning, and leaves us to regret that Augustine was not a Hebrew scholar. His remarks upon the "Four Gospels" are more valuable, particularly his judgment that Matthew's gospel was not originally written in Greek. His work on the "Care that should be Taken for the Dead" contains some striking views concerning the relation of the living to disembodied souls.

The volume of his "Epistles" is remarkable, not only as illustrating his best style, but the finest traits in his character—his clemency, his charity, his moderation, his freedom from all guile and malice. The heart of the man speaks in these communications. Many of these letters, moreover, are full treatises on important points of faith and discipline.—The name of Augustine, in the dogmatic history of the church, is best known in connection with the heresy of Pelagius, as the defender of hereditary native depravity, of God's sovereign grace in salvation, and of God's predestination of the fate of men. But the works of his, which are most widely known and most often read, are his "Confessions" and his "City of God." In the first of these works, written just after his conversion, he gives a history of his life up to that time, not so much in its outward circumstance as in its inward experience and change. The work is divided into 13 books, of which the last 8, however, are only a commentary upon the account of the Genesis, and have nothing to do with the personal history. The long popularity of this half-mystical story of a soul at strife with itself, confused, wandering, but at last saved and peaceful, attests its charm and its power. It has been translated into every Christian tongue. It is classed with the choicest memorials of devotion, both in Catholic and Protestant oratories, with the "Meditations" of A Kempis, the visions of Theresa, the allegory of Bunyan, the poems of Herbert, the "Saints' Rest" of Baxter, and the "Serious Call" of the quietist Law. We may call it a reverie, rather than a narrative, for it is addressed to God, and it moves on with the adoring rapture of grateful devotion. It meets a common want, and it will continue for ages yet to be a manual for the penitent, while it will remain for the critic a curious study. It has been imitated often by preachers, mystics, even by sentimental sceptics, yet none have fully caught the solemn beauty of their model. It is at once plaintive and suggestive, awakening sympathy and quickening imagination, and sending the thought of the reader, amid lonely hours of prayer and suffering, forward to the home in the heavens.—But the prophetic spirit of Augustine finds its loftiest utterance in his noble work called the "City of God." This is, beyond all question, the monument of highest genius in the ancient church, and in its kind it has never been surpassed. Its idea was first conceived when the tidings of the barbarian devastation of Rome reached his ears. Its immediate purpose was to vindicate the faith of the gospel against the pagans, who reproached Christianity as the author of the woe and danger which seemed to threaten the world. It is divided methodically into 23 books or chapters. Of these the first 5 books confute the heathen thesis that the worship of the ancient gods is essential to human prosperity, and that miseries have only come since the decline of this worship. The 5 following

books refute those who maintain that the worship of pagan deities is useful for the spiritual life. The remaining 12 books are employed in setting forth the doctrine of the Christian religion, under the somewhat fanciful form of "two cities," the city of the world and the city of God, their origin, their progress, and their end. The rhythmic order of the work—the wave of imagination on which its narrative and its argument, its historic illustrations, its nice analogies, its sad review of follies, superstitions, errors in faith and errors in practice, seem to be borne—the fervor of its piety, if not the glow of its prophecy—the changes of tone from the minor key of a funeral strain to the triumphant vision of Christian victory, justify us in classing it with the greatest epics of the world. We may say of it, as was said of Varro's "Antiquities of Rome," that it shows so much reading that we wonder how one could find time to write it. In the light of subsequent history it seems one long prediction of the triumphs of the cross. Here Augustine shows himself far in advance of his age. While his solemn review of the dying paganism reminds us of that custom of Egypt whose kings were judged before their burial, his picture of Christian society, of the course of Providence in the Christian history, and the principles which obtain in this higher state, anticipates the development of later ages. Some have seemed to find in it the doctrine of progress, and the paradise which it sets before us is certainly a kingdom of ideas and sentiments, of righteousness, temperance, peace, and freedom. It declares the truth of equality in the spiritual state, and liberty to all the children of God. Its defects are those of a too vivid fancy and a too affluent rhetoric. Yet it deserves the verdict which the emperor Charlemagne declared concerning it. It is a true picture of a Christian republic.—The influence of Augustine upon his own age, and upon all succeeding ages of Christian history, cannot be exaggerated. A boundless reverence has magnified his sainthood. It is believed that he was at once the purest, the wisest, and the holiest of men, equally mild and firm, equally prudent and fearless, equally a friend to men and a lover of God, at once a philosopher and a mystic, a student and a ruler. Of his singular humility manifold instances are recorded. His severe self-discipline matches the strictest instances of the hermit life. In his "Retractions," that work of old age, begun after he finished his 70th year, he goes over the ground of his long and various labors, reviews his writings, taking back whatever is doubtful or extravagant, harmonizing discordant opinions, and winnowing out the solid grain from what he regarded as this vast mass of accumulated chaff. He left to the world, in this last labor, not only his testament, but the sign of his candid and truth-loving soul.—The aid of a coadjutor relieved Augustine, in his latter years, of a portion of his responsibility; yet questions of conscience were con-

stantly presented to him. When Genseric and his Vandals showed themselves on the coasts of Africa, the question was put to him, if it were lawful for a bishop at such a season to fly and leave his flock. The answer which he made was illustrated by his own course. He calmly waited for the threatened approach, and when the fleet of the foe were in the bay of Hippo, and the army were encamped before the walls, exerted himself only to quiet the fears and sustain the faith of his brethren. It was not permitted him to witness the catastrophe. A propitious fever hastened his fate, so that he had not to know the ruin of the city that he loved. The bishop Possidius, who watched at his bedside, gives an edifying account of his last days, so consistent with the tenor of his life, and of the grief of the people at his loss. He died Aug. 28, 430, at the age of 76, and that day is observed as the day of his remembrance. His relics were afterward transported to Italy, and mostly rest at present in the cathedral of Pavia. Within the present century, the bone of his right arm has, with solemn pomp, been returned to the church of Bona, in Africa, which occupies the site of ancient Hippo. The best edition of Augustine's works is that of the Benedictines, published at Paris and at Antwerp at the close of the 17th century, in 11 vols. folio. An edition in 11 volumes was also published in Paris in 1836-'89. An additional volume of sermons, before unpublished, found at Monte Cassino and Florence, was published in Paris in 1842.

AUGUSTINIANS, or HERMITS OF ST. AUGUSTINE, a religious order in the Roman Catholic church. This order professes to trace its origin to the great bishop of Hippo, and to have received its rule from him, although many Catholic writers dispute the fact. It appears from the life of St. Augustine, that in the year 388, before his ordination, he erected a kind of hermitage on a little farm belonging to himself near Tagaste, where, with several friends, he passed his time, in seclusion, occupied with study and ascetic exercises. After he became a priest at Hippo, he established a similar retreat in a garden, presented to him by the bishop, and during his subsequent episcopate he had his clergy living with him in his house, under a kind of monastic rule. From these circumstances, he has been looked upon as the founder and special patron of a certain class of religious communities, and many of their rules have been drawn from his writings. The present order of hermits of St. Augustine, was formed by uniting several societies previously distinct. This was done by Alexander IV. in the year 1256, and a rule was given them, attributed to St. Augustine. In 1567, the Augustinians were enrolled among the mendicant orders. In England, they were usually called Black Friars, from the color of their habit. There are several distinct branches of Augustinians whose rule is more severe than that of the principal body; they are governed by vicars-general, who are

subordinate to the general. Rome is the chief seat of the order. The number of convents is about 100. There is a large and beautiful church belonging to the Augustinians, with a convent adjoining, at Philadelphia; also a college, with a monastery and a well-cultivated farm adjoining, at Villanova, Delaware County, Pa., about 15 miles from Philadelphia.—**AUGUSTINIAN CANONS** are a separate body of canons regular attached to the Lateran basilica and few other churches.—Several religious orders of females belong also to the Augustinian family.

AUGUSTOVO, or **AUGUSTOV**, a province and city of Russian Poland. The province lies between lat. 52° 40', and 55° 5' N., and is the most northern of the 8 palatinates into which Poland was formerly divided. A large part of its surface is covered with lakes, marshes, and forests. Its area is 7,000 square miles, and its population is about 810,000. The town lies on an affluent of the Narev, 140 miles N. E. from Warsaw. It was founded by Sigismund in 1557, has trade in cattle, woollen, and linen manufactures, and a population of 8,350.—**CANAL OF AUGUSTOVO**, a canal of Poland, which, by connecting the Narev with the Niemen river, unites the Vistula with the Baltic. It extends from Wizna on the Narev to a point on the Niemen, 14 miles N. of Grodno. It is 150 miles in length, from 5 to 6 feet deep; has 17 locks, and was completed in 1881.

AUGUSTULUS, **ROMULUS**, the son of Orestes, and the last Roman emperor of the West, was remarkable only for his weakness and the beauty of his person; on the defeat of Orestes at Pavia, and his subsequent execution, Augustulus was forced to abdicate,—he was banished to the castle of Lucullus, in Campania, where he received an annual allowance of 8,000 pieces of gold.

AUGUSTUS, **CAIUS OCTAVIUS CÆSAR**, second emperor of Rome, born Sept. 23, 63 B. C., died Aug. 29, A. D. 14. He was the son of Caius Octavius, of Velitra, a city of the Volsci, and Attia, the daughter of Julia, the sister of Caius Julius Cæsar, the dictator. The obscure name of Caius Octavius, which he received from his father, he dignified first by changing Octavius into Octavianus; secondly, by assuming, after he became the adopted son of the dictator, the illustrious surname of Cæsar; and thirdly, by receiving from the senate, 27 B. C., the appellation, then first invented, of Augustus, corresponding to the Greek word *σεβαστος*, or "the venerable," and which became the title of the future emperors, both of the East and the West. He was brought up by his uncle, who had no children, and, though he is said to have displayed some talents and activity in Spain, whither he had accompanied his uncle, he had certainly made no mark, nor given any indications of the great part he was about to play, in the history of the world. He was living in retirement at Apollonia, in Epirus, when he heard of his uncle's death, and of his own adoption by Cæsar's will; when he instantly avowed his mission,

which, he declared, was simply "to avenge Cæsar and to pay his legacy to the Roman people." With the exception of his name, there was nothing in his person to please the soldiers. He had neither scars nor trophies to show—he knew not how to set a battalion in the field; he was personally unknown to the legionaries. He was but eighteen years old, mean in figure, sickly, lame, afraid of thunder, afraid of the dark, afraid of weapons, afraid of men—"yet," says Michelet, "he had sufficient political audacity. He had need of it, when he came to claim the succession of Cæsar." He had more, he had the deepest dissimulation, the deepest policy—singular astuteness, unbounded selfishness; and, by a rare union of almost indescribable qualities, he subjected to himself all talents and sacrificed all interests. He arrived in Rome while the agitation caused by the murder, the plots of the conspirators, and the ambitious designs of Cæsar's friends, was at its height; and though but a youth amid most cunning and ambitious statesmen, he blinded the eyes of his rivals to his purpose, and eventually, and with consummate tact, bore away from them the prize of the empire. At first, by patronizing Cicero, he obtained from the senate the command of the army against Antony, who had seized the treasure and aimed at the empire of Cæsar; and in connection with the 2 consuls, Hirtius and Pansa, he defeated him and drove him across the Alps into Gaul. The death of the consuls left all the armies under his immediate command, and his increasing popularity excited suspicion at Rome, where a rumor had been spread that his own agency had wrought the fall of the consuls, he having caused them to be assassinated by his emissaries among their own soldiers in the moment of victory. At the head of his troops he obtained the consulship from the terrified senate, and when Brutus and Cassius were becoming too strong for him in the East, armed as they were with the authority of the senate, he reconciled himself to Mark Antony, the great soldier of the day, and formed, with him and Lepidus, the third triumvirate, deluging Rome with noble blood. The alliance was cemented by the marriage of Antony with Octavia, the sister of Augustus. Each of the triumvirs was to have all his enemies put to death, and upon the long lists of the proscribed was found the name of Cicero. By Antony, Augustus soon after conquered Brutus and Cassius, in the decisive battle at Philippi. After dividing the Roman world with that strangely eccentric sensualist, voluptuary, general, and madman, he then in turn conquered Antony by the hand of Agrippa, being himself concealed in his tent, while the world was lost and won in the gulf of Actium. Thenceforth, although he assumed no titles, refused all emblems of dominion, he governed the Roman world as an absolute master. He beautified the city; tranquillized the provinces, fed and amused the people; played the stern censor of public morals; affected to restore

ancient forms, and to reconstitute the old republic, while he was, in truth, degrading the senate, destroying the equestrian order, and debasing the people by prodigal donation of rights of citizenship. Frugal in his habits, moderate in his expenses, mingling with the people as an equal, he governed absolutely, and he governed cruelly, but it must be admitted that he governed well. He regulated the empire by set forms, centralized the powers of the state, reduced the turbulent armies of the republic to perfect and incomparable discipline, repressed the luxury of all ranks, abated the haughtiness of the old nobles, pacified the whole world, and so adorned the capital, that it was commonly said of him, that he found Rome "brick, and left it marble." Concerning the secret motives of the conduct of Augustus, the most various opinions have been entertained, both in ancient and recent times. While some have maintained that his selfishness and faithlessness were shown only in the steps that he took to gain the supreme power, and that his subsequent government proceeded from honest intentions, others have thought him to be in every period of his career a cool and calculating hypocrite, whose first impulses were better than his calm afterthoughts, who never sinned from passion, but always acted with malice prepense. He was 3 times married, and his domestic life was disturbed and unhappy. Marcellus, his sister's son, a youth of promise, whom he had destined to succeed him, and whom he sincerely esteemed, died young; and when he died himself, in the 45th year of his reign, and the 76th of his age, he was persuaded to leave the empire to Tiberius, the son of his third wife, Livia.

AUGUSTUS II., *FREDERIC*, elector of Saxony and king of Poland, second son of John George III., elector of Saxony, born May 12, 1670, died Feb. 1, 1733. To finish his education, his father sent him to travel, and he visited all the countries and courts of Europe, Rome alone excepted. Thus he contracted the love of royal pomp and luxury, but likewise that of the arts, and began the collection of pictures and other objects of art comprising the gallery in Dresden, which, increased by his son, became one of the most celebrated in Europe. After the death of his father in 1691, and of his elder brother, in 1694, he became sovereign of Saxony, and after the death of John Sobieski, king of Poland, in 1696, he was elected as his successor by the nobility of that country, to obtain which election he, however, previously changed his religion from Protestantism to Catholicism. To restore to Poland some provinces lost to Sweden, Augustus attacked Charles XII., concluded an alliance with Peter the Great, but after an unsuccessful struggle, protracted for years, in which both his kingdoms suffered terribly, he was obliged to conclude a peace, and at the bidding of Charles XII., to resign the crown of Poland, which the victor gave to Stanislas Leszczynski. When Charles was defeated at Pultowa in 1709, Augustus renewed

his alliance with Peter the Great, broke the peace with Sweden, entered Poland with an army, expelled Leszczynski, and recovered the crown. His reign was one of great luxury and splendor, his court a scene of uninterrupted festivity, with numerous artists, adventurers, alchemists, and beautiful women, one of whom, the celebrated Countess Königsmark, was by Augustus the mother of that Maurice, marshal of Saxony, so celebrated at the court of Versailles and in the history of France. By his gorgeous mode of life, Augustus exhausted his Saxon subjects, but attracted and attached to his person the nobility of Poland. The rich magnates imitated the example of the sovereign, erecting splendid palaces in Warsaw and on their estates. Augustus died in Warsaw, at the age of 63. He was elegant, affable, and attractive in his manners, brave on the battle-field, skilful in all bodily chivalrous exercises, of an extraordinary muscular force, for which he was surnamed Augustus the Strong, but without any corresponding excellence in his character.—Augustus III., son of the former, born in 1696, died Oct. 5, 1763, succeeded his father in both Saxony and Poland, in the first by the right of inheritance, in the second by election, though he was opposed by Stanislas Leszczynski, who was supported by Louis XV., his son-in-law, and a portion of the Polish nobles. Augustus continued the gorgeous reign of his father, his greatest passion being hunting and festivities. Having had, previously to his accession to the two thrones, travelled in Italy, and being favored and patronized by the pope, he obtained there many beautiful works of art for his gallery in Dresden, among others the celebrated *Madonna Sistina* of Raphael, several Correggios, and many other works of the great masters. His reign over Poland was quiet, but in every respect demoralizing. Peace did not serve to develop mental activity and industry, but to foster and nourish mental and physical atrophy. It was said that Augustus the Saxon succeeded in making of the Poles finished revellers, to their own hearty satisfaction. Count Brühl, his favorite, ruled in the sovereign's name, and Augustus being married to an Austrian princess, he and his premier had no other policy than subserviency to Austria, and he became entangled in the wars against Frederic II. of Prussia. In 1742, he concluded an alliance, offensive and defensive, with Maria Theresa, and promised afterward to bring into the field 50,000 men. This army, united with the Austrians, was beaten at the battle of Hohenfriedberg in Silesia, when Frederic invaded Saxony and entered Dresden, while Augustus fled to Poland, which was at peace with Frederic. In 1746, a treaty between the belligerents put an end to the struggle. Soon, however, the celebrated 7 years' war broke out, in which Augustus, as elector of Saxony, participated again on the side of Austria. At the beginning, his Saxon army was compelled to surrender to Frederic, and he himself fled to Warsaw, persisting in his

alliance with Austria, and resided there until the pacification by the treaty of Hubertsburg, when he returned to Dresden, where he died.

AUGUSTUS FREDERIC, prince of Great Britain and Ireland, duke of Sussex, the 6th son of George III. of England, born Jan. 27, 1773, died April 21, 1843. He studied at Göttingen, and subsequently travelled in Italy. While at Rome, in 1798, he married Lady Augusta Murray, daughter of the Catholic earl of Dunmore, but as there were some doubts as to the validity of this marriage, the wedding ceremony was repeated in London, Dec. 5, 1798. This marriage was annulled, however, by the prerogative court of Canterbury, as contrary to act 12, of George III., chap. 8, which declared that no descendant of George II. should marry without the consent of the crown. Lady Augusta separated from the duke immediately after the publication of this sentence, having borne him a son and daughter, who took the name of D'Este. In 1801, the duke was made a peer, and received a parliamentary grant of £12,000 per annum, which was subsequently increased by the addition of £9,000. In the house of lords, the duke took the liberal side on most public questions, on the abolition of the slave trade, on the Catholic emancipation, and Jewish emancipation, on the reform bill, and the free trade question. In 1810, he was elected grand master of the free masons; in 1816, president of the society for the encouragement of the useful arts; and in 1830, president of the royal society. He was a munificent patron of literature and art, and possessed one of the finest libraries of England. His liberal opinions in politics, and the part which he took in favor of Queen Caroline, made him unpopular at court, but before the death of George IV., a reconciliation took place between them.

AUGUSTUS OF BRUNSWICK, the younger, born April 10, 1557, died at Wolfenbüttel, Sept. 17, 1666, celebrated for his learning, and chiefly for his proficiency in the game of chess. He was present at the coronation of James I. of England, and was a friend not only of Henry IV. of France, and of the other potentates of Europe, but one of the foremost scholars and savants of his day. In 1634, he ascended the ducal throne of Brunswick-Wolfenbüttel, and distinguished himself during his reign by a remarkable solicitude for the promotion of education among his people, and by the foundation of a library at Wolfenbüttel, which contained, in 1814, 80,000 vols. He published a variety of writings, under the *nom de plume* of Gustavus Selenus. His most celebrated work, *Schach oder Königspiel* (chess, or king's game), was published at Leipzig in 1616, and translated into English by T. H. Sarratt (London, 1817). Bilguer of Berlin, and other modern authorities on chess, generally represent this work as being nothing but a German translation of the celebrated Spanish book on chess by Guy Lopez. But the fact is, that while many of the data are probably taken from Lopez, Augustus has made

the work his own by the mass of learning and of historical information which he has put into it, and which, to this day, secures for it a prominent place in chess literature.

AUK, the name of certain sea-birds of the family *alcada*, including the subgenera, *alca*, *fratercula*, *mergulus*, and *phalaris*. The true auks (*alca*) are strictly ocean birds, and scarcely ever leave the water, except for purposes of nidification and breeding, though they endeavor to scramble away, with a sort of uncouth and awkward swiftness, when pursued. They breed in immense flocks in caverns and crannies of rocks, laying but one disproportionately large egg. The young are fed from the crops of their parents, even after they can move about freely, and shift for themselves. This genus contains but 2 species, the great auk and the razor bill. The former (*alca impenans* Linn.) is remarkable for the imperfect development of its wings, which are totally unfit for flying. They are set very far back on the body, and extremely small, indeed, not much more than rudimental; but are used by the bird as oars, which, in conjunction with its feet, it plies with such power and velocity, that it has been known to escape from a six-oared barge pulled in pursuit by vigorous oarsmen. It rarely leaves the arctic circle, and the waters adjoining, nor is it often seen off soundings, but dwells in great numbers in the ocean that washes the Farøe islands, Iceland, and it has been asserted that it breeds at Newfoundland. In summer all the upper parts of this bird's plumage are of a deep sooty black, which is changed, in winter, to white on the cheeks, the sides of the neck, and the throat. It breeds in June and July, and lays one large yellowish egg, as big as a swan's, irregularly dashed with black marks, which have been compared to Chinese characters. It has a large decurved bill with sharp cutting edges; and its feet, being situated at the extremity of its body, it stands or sits erect, propped up by its short stiff tail, after the manner of the penguin, which it not a little resembles.—The second species is the black-billed auk, razor bill, or murre (*alca torda* L.). It belongs to the northern latitudes, in the extreme height of which these birds swarm in multitudes inconceivable, during the breeding season, affording food by their flesh, and, by their downy skins, clothing to the Esquimaux, who place on them their chief, if not their whole dependence. Constant mention is to be found of them in the works of Dr. Kane, to whom they became, on his last fatal voyage, as absolute a necessity as they are to the poor savages, of whom he was not ashamed to be the friend. The bill of the black auk has some analogy to that of the falconine birds, having a sharp hook at its extremity, and a denticulated process, at about two-thirds of its length, which is of great use in securing its slippery prey, a task in which its feet lend it but little aid. Its general color is dusky above, and white below; it flies

sufficiently well, but, like the species last described, uses its wings as oars, in diving, which it does to perfection. It has the same habit of sitting erect as the great auk; and, being very abundant on all the rocky coasts of Great Britain, where it sits in long horizontal rows on the steps or ledges of the crags, towering one above the other, offering so peculiar an appearance that the fishers and fowlers compare the rocks to an apothecary's shop, the successive ledges to the shelves, and the white breasts of the razor bills, "in order ranged," to the rows of white earthen gallipots.—The next division, *fratercula*, like the two remaining, contains but a single family, the Labrador auk, common puffin, or coulteneb (*fratercula arctica*), his last name being admirably descriptive of his strong massive beak, the mandibles of which, when separated, especially the upper one, almost exactly resemble the coulter of a plough. The upper parts of this bird are dusky, his cheeks and belly white. He has a black collar round his neck; his legs and feet are orange, and his broad, cutting-edged beak is bluish gray, next to the head, but scarlet thence to its obtuse point. Although it extends to the high arctic regions, it is in England only a summer visitor, breeding in the low sandy islands in rabbit burrows, of which they dispossess their legitimate owners; or, where there are no rabbits, burrowing themselves. In rocky places, as Dover cliffs, Flamborough head, and the Bass rock, at all which places they abound, they lay their single egg in the crevices of the rocks. When they have reared their young, they pass from England to the southern coasts of France and Spain, where they winter. Their burrows are curiously excavated, by means of their great bills, to the depth of 2 or 3 feet, and often have 2 entrances for escape in case of surprise. The length of the puffin is about 12 inches.—The third division, *mergulus*, has, likewise, but one representative, the little auk, common rothe, or sea dove, *mergulus melanoleucus*, which is the smallest of the species, and a native of the very highest latitudes, congregating in large flocks in the arctic circle; Greenland and Spitzbergen and Melville island being their favorite stations. Their plumage is black and white; and, in winter, the front of the neck, which is black in summer, turns white. It lays but a single egg, of pale bluish green, on the most inaccessible ledges of the precipices which overhang the ocean. It is about 9 or 10 inches in length.—The last division, *phalaris*, again, contains but a single species, the parroquet auk, *phalaris prittacula*. This, also, is an extreme northern bird. It is about 11 inches in length. Its head, neck, and upper parts, are black, blended into ash color on the forward parts of the neck; the breast and belly white; the legs are yellowish, the beak, in the adults, red. This bird swims and dives admirably, and is said to be of a singularly unsuspicious character, being easily captured by the most inartificial strata-

gem of the natives of those dreary regions. About midsummer it lays one large egg, nearly of the size of a hen's, with brown or dusky spots, on a whitish or yellowish ground. The singular disposition of providence in limiting the production of these birds to a single egg yearly, is truly wonderful, even as it is beneficent; for, when we regard the countless millions which swarm in the arctic solitudes, even under this restriction, it is easy to perceive what would be the result, even in those regions overflowing with animal abundance during the brief summer time, were these sea fowl as prolific even as the gull or terns, much less as domestic fowls.

AULAF, or ANLAF, ANALAPH, ANALAV, or ONLAF, a name borne by several Northumbrian kings of Danish origin, about the second half of the 10th century. I. A Northumbrian petty king and a pagan, died 980, after the expulsion of Guthfrith and Aulaf, sons of Sihtric, king of Northumberland, by the English king Athelstan. Aulaf fled into Ireland, and we learn what we know of him from the Irish annals. He fought against the native tribes in that island. In 987 he endeavored to recover Northumbria, but was repulsed by Athelstan. He returned to Ireland, and repaid the hospitality of the Irish by ravaging Kilcullen. After the death of Athelstan, Northumbria fell away from the English crown, and Aulaf recovered his inheritance after defeating Edmond at Tamworth and Leicester. Edred, the English king, and successor of Edmond, marched against him, made him do homage, and embrace Christianity. In 992 Aulaf was driven out by the Christian Northumbrians, and tired of struggling against the English, he went over to lead the Ostmen of Dublin against the Irish. He defeated Murdoch, king of Leinster, in 996, whom he put to death in 997. Two more Leinster princes suffered the same fate in 977. At this time he called himself king of Ireland and the Isles. In 980 Aulaf lost his son and heir, Reginald, or Regnell, in an engagement against the Hibernian aborigines, and in the same year, heart-broken, he went on a pious pilgrimage to Iona, where he died, after a stormy life. II. Son of Guthfrith, and uncle of the preceding lived in the latter half of the 10th century. He joined in the wars of his nephew against the Saxons in South Britain and the Celts of Erin. He ravaged Armagh in 982, and Kilcullen in 988. In 989 he was obliged to shut himself up in Dublin. He made an irruption into England with his nephew, conquered Edmond, the successor of Athelstan, in 948, and recovered Northumbria. He lived and died a pagan, and a hater of the Christian clergy.

. AULIO, an adjective derived from the Latin word, *aula*. It was first applied to the higher civil officers of the Byzantine empire. In Germany it was applied to a council and councillors, established, in 1501, by the emperor Maximilian I. Originally this council

was to decide questions which properly came before the emperor, but its jurisdiction was soon extended to cases belonging to the supreme court of the empire. Successive emperors more and more facilitated and protected the council in its usurpations of power, which reached their culmination after the treaty of Westphalia. At first the council was composed of a president, a vice-president, and an indefinite number of councillors, divided into 2 classes, viz: the nobility, represented by counts and barons, and jurists. All of them were named by the emperor alone. By the treaty of Westphalia 6 of the councillors were to be Protestants, and their united vote was to counterbalance that of the Catholic members, whatever might be their number. The elector, prince bishop of Mentz, was intrusted by that treaty with the presidency of the council. It decided all litigation of a purely feudal character, relating to the imperial vassals in Germany and Italy, for which countries it had the power of feudal investiture of counts and barons of the holy Roman empire. The decisions were beyond question, except by petition to the emperor, and when all the German states had a common complaint against the council, the appeal was brought before the diet. At the death of the emperor, the functions of the councillors ceased, and during the interregnum the court was vacated.—After the dissolution of the German empire in 1806, the newly created Austrian emperors preserved the name of the old aulic council for the supreme government of their empire. This new body, divided into departments, had the supreme, administrative, military, and sometimes judicial power. It directed distant military operations, and to its interference are attributed many of the disasters sustained by Austria in her wars against Napoleon. It was wholly abolished after the events of 1848.—The word *aulic* is also applied in some universities to the thesis discussed on the day of the creation of a new doctor of divinity.

AULICH, LUDWIG, a Hungarian general, born in 1792 at Presburg, distinguished himself in 1848 and 1849, especially by the active part he took in defeating Windischgrätz's army in March and April, 1849. After the evacuation of Pesth by the imperial troops, Aulich made his triumphant entry into that capital, and was received with enthusiasm by the people. In his famous proclamation of Gödöllő, Kossuth paid also an appropriate homage to Aulich's gallantry. After the siege and storming of Ofen, he was sent to Görgey, in order to prevail upon that general to desist from his disobedience to the government, but Görgey would not yield. Subsequently, when Görgey was forced to renounce either the army or the ministry of war, he took the latter alternative, and Aulich was appointed his successor. But Aulich was completely under the influence of Görgey, and although he might have used his authority as minister of war to frustrate Görgey's negotia-

tions with the Russians, he actually assisted Görgey to bring these negotiations to a successful close. Aulich was punished by the Austrians at Arad, on Oct. 6, 1849, when, in company with 12 others, he perished on the gallows.

AULIS, in ancient geography, a town in the district of Hellas, called Boeotia, in the straits of Euripus, between Boeotia and Euboea; it had a temple of Artemis. Here, according to the tale of Troy, Agamemnon assembled his fleet preparatory to crossing the Ægean sea to Troy, and here his daughter, Iphigenia, was offered up as a sacrifice to Artemis. In the time of Pausanias, the geographer, only a few potters inhabited it. It still retains its ancient name.

AULNE, a river of France, in the department of Finistère, rises near Lahuée in the Black mountains, and after a winding course of 70 miles, in which it passes Châteauneuf and Châteaulin, falls into Brest harbor. It is navigable to Châteaulin, a distance of 14 miles, and forms part of the canal between Nantes and Brest.

AULON, JEAN D', a French cavalier in the service of Charles VII., and subsequently councillor of the king, master of requests, and seneschal of Beaucuire, became celebrated by his association with Joan of Arc, whose faithful companion in arms he was up to the moment of her imprisonment by the English. After her death, when a trial was instituted at Lyons with a view of rehabilitating her memory, Jean d'Aulon was one of the principal witnesses, who testified to the spotless character of the heroic woman.

AUMALE, a small place of France, in the department of Lower Seine, known for its historical associations. In the beginning of the 16th century, Aumale was a county belonging to Claude I. of Lorraine, 5th son of René, duke of Lorraine, who was afterward created duke of Guise by Francis I. of France, and became the head of the illustrious family of that name. It was raised to the rank of a duchy by Henry II., and held as such by Claude II., 8d son of Claude I., and brother of the celebrated Francis of Guise. This duke of Aumale, who distinguished himself during the war of the French against the emperor Charles V., took a great part in the bloody religious conflicts which troubled the reign of Charles IX., and was one of the promoters of the St. Bartholomew massacre. His son Charles fought against Henry IV., assisting him under the duke of Mayenne, in the battles of Argues and Ivry, where the troops of the league were defeated.—The title of duke of Aumale, after being extinct for years, has been revived in our times, and given to a prince of the Orleans family. AUMALE, HENRI EUGÈNE PHILIPPE LOUIS D'ORLÈANS, duke of, 4th son of King Louis Philippe, was born at Paris, Jan. 16, 1822. Like his brothers, he was educated at one of the public colleges of Paris, where he made himself very popular among his fellow-students by his amiable temper and cordiality. The duke of Bourbon, the last prince

of the house of Condé, made him his heir; so that he came into possession of the largest fortune in France. This, however, did not deter him from leading an active life; he entered the military service at the age of 17, being appointed to a captainship in the 4th regiment of the line. As an aide-de-camp to his eldest brother the duke of Orleans, he took part in the African expedition of Medeah, where he conducted himself with bravery. He was consequently promoted, served a second campaign in Algeria, and left the country only on account of ill health. Returning to France, he was entering Paris, Sept. 13, 1841, at the head of the 17th regiment of the line, of which he had been appointed colonel, when a man of the name of Quenisset discharged a gun at him, but happily missed his aim. At the age of 20, he was promoted to the rank of brigadier general, and insisted on being again sent to Algeria, in Oct. 1842. Intrusted with the command of the district of Medeah, he evinced great activity, skill, and intrepidity. On May 16, 1843, he attacked the smala of Abd el Kader with such impetuosity that in less than 2 hours the emir's troops were entirely routed; and the result of this brilliant exploit was the capture of 3,600 prisoners, immense numbers of cattle, and the treasures of the chief. As a reward, Aumale was made lieutenant-general and commander of the province of Constantine. In 1847, the young prince, but 25 years old, was intrusted with the general governorship of Algeria, which was taken from the hands of Marshal Bugeaud. This appointment was not approved either by the army or the French nation; it was the occasion for loud complaints against the ambition of the king, who was concentrating the direction of the whole military service in the hands of his sons; Nemours was already at the head of the army, while the prince de Joinville had the control of the navy, and the duke de Montpensier that of the ordnance. Events, however, seemed to vindicate the promotion of Aumale; for, soon after, Abd el Kader notified the French of his willingness to surrender himself into their hands, and the young governor went to Sedi-Brahim to receive his submission. There he promised that the emir should be allowed to reside where he pleased, except in Africa; but this generous promise was not kept by the French government, and Abd el Kader was sent a prisoner to France. It must be said, in justice to Aumale, that he was not an accomplice in this breach of faith, and Abd el Kader himself never thought of holding him accountable for it. The revolution of February took the young governor by surprise; but it cannot be denied, even by his enemies, that in this difficult juncture he acted with noble and patriotic disinterestedness. Hearing of the sudden abdication of his father, he exhorted the population to wait calmly for further developments; and on March 8, he resigned his authority in the following words: "Abiding by the national will, I retire; but in my exile, all

my wishes will tend to the prosperity and glory of France, which I would gladly have been able to serve longer." He embarked on the steamer Solon, and sailed for England, where he joined the other members of his family. He is now living in Sicily with his wife, Maria Caroline Augusta de Bourbon, princess of Naples and daughter of the duke of Palermo, whom he married in 1844, and by whom he has a son who bears the title of prince of Condé.

AUMONT, the name of one of the great historical families of France. The first Aumont mentioned in French history, is JEAN III., SIRE D'AUMONT, who, in 1328, took part in the battle of Cassel, and served under Philip de Valois, on many other important occasions. One of the more distinguished members of the family was JEAN D'AUMONT, born 1522, died 1595. He was on the battle-field almost from his cradle to his grave. He served under 6 kings: Francis I., Henry II., Francis II., Charles IX., Henry III., and Henry IV.—ANTOINE D'AUMONT, born 1601, died 1669, served with distinction under Louis XIV., and in 1662 was appointed governor of Paris.—LOUIS MARIE VICTOR D'AUMONT and DE ROCHEBARON, born 1632, died 1704, took an active part in the war in Flanders under Louis XIV., was governor of Boulogne and the Boulonnois, and member of the academy of inscriptions and belles-lettres.—JACQUES, DUC D'AUMONT, born 1732, died 1799, was the commandant of the national guard, on Oct. 5, 1789, when Louis XVI. was forcibly taken away from Versailles.—LOUIS MARIE CÉLESTE DE VIENNE, DUC D'AUMONT, born 1762, died 1831, was a wild youth, and served in Germany, Spain, and Sweden, until the restoration, when he was reinstated in his position, and appointed lieutenant-general. He made himself very useful to the cause of royalty in suppressing the troubles in Normandy, and in 1815 he was created peer of France, and raised to the office of first chamberlain. He was one of the most prominent men at the courts of Louis XVIII. and Charles X., but he exchanged politics for theatres, and became the chief director of the comic opera.

AUNGERVYLE, RICHARD, known in history as Richard de Bury, born A. D. 1281, near Bury St. Edmunds, died April 14, 1345. He was the son of Sir Richard de Aungerville, and was educated at Oxford. Even while pursuing his university studies he was remarkable for those characteristics which distinguished him in after life—for his learning, his wit, and the sanctity of his life. He was appointed tutor of the prince of Wales, who afterward took the crown as Edward III. Upon the accession of his pupil to the throne Aungervyle was remembered, and received successively the appointments of coif-feur to the king, treasurer of the wardrobe, and keeper of the privy seal. In 1338 he was consecrated bishop of Durham. In 1334 he succeeded Archbishop Stratford as lord high chancellor of England, which office, however, he resigned in 1335 for that of treasurer several times abroad as am'

Rome and thrice to Paris. During his whole life Aungervyle had possessed a strong love of books, and employed every means to collect together such as were most rare and costly. When bishop of Durham his library was so extensive that it was said to have been "greater than that of all the other bishops of the kingdom put together." The latter part of his life he gave up entirely to books. He died at his manor of Bishop's Auckland, and was buried with great pomp in his own cathedral.

AUNIS, an old division in the west of France, between Saintonge, Poitou, and the Atlantic, forming with Saintonge the modern department of Charente Inferieure.

AUPIOK, a French general and diplomatist, born at Gravelines, Feb. 18, 1789, died at Paris, April 29, 1857. During the ascendancy of the republicans after the revolution of Feb. 1848, he was sent as ambassador to Constantinople, in which position he remained till 1851, when he exchanged it for a similar mission to London. There he was succeeded after a few months by Count Walewski, and was immediately after sent by Louis Napoleon as minister plenipotentiary to Madrid, where he remained till succeeded by the marquis de Turgot in 1853. He was thoroughly versed in military science.

AURELIA, the mother of Julius Cæsar, died 54 B. C. When the patrician Claudius profaned the mysteries of the Bona Dea, which were celebrated by the Roman matrons in the house of Cæsar, by entering the house disguised as a female musician, in order to meet Pompeia, Cæsar's wife, his detection was owing entirely to the sagacious vigilance of Aurelia.

AURELIA ORESTILLA, a Roman woman, celebrated for her beauty, but not distinguished for virtue, lived about 50 B. C. Catiline fell in love with her, and was said to have made away with his first wife, and afterward with his son, in order that he might marry her.

AURELIAN. I. LUCIUS DOMITIUS, emperor of Rome, born at Sirmium in Illyria about A. D. 212, died in March, 275. He was a man of stern, hard integrity, and a great soldier. The son of a peasant, who acted as steward or bailiff to a rich senator, Aurelius, who owned the farm on which he was born, he enlisted in the ranks of the legionaries as a private, and rose by successive steps to the grades of centurion, tribune, prefect of a legion, inspector of the camp, and duke of a frontier. In the Gothic war he served as commander-in-chief of the cavalry. He always fought in the front ranks, with his own sword, and was invariably successful; his strictness as a disciplinarian, his conduct as a leader, and his valor as a soldier, being all equal, and, in that age, incomparable. He is said by Theodotus, in his lives of the Cæsars, to have killed, with his own hand, 48 Sarmatians in one engagement, and in subsequent conflicts 950; so that his soldiers, in their triumphs, were wont to celebrate his exploits in their rugged ballads, the burthen of which was *mille,*

mille, mille occidit. On the death of Claudius, the emperor Aurelian was at once invested by the legionaries of the great army of the Danube with the imperial purple, and Quintilius, the brother of the late emperor, who had assumed the diadem, judging himself incompetent to contend with such a rival, withdrew from the unequal conflict, and, causing his veins to be opened, died a voluntary, if ignominious, death. The reign of Aurelian, who succeeded without further opposition to the throne, lasted but 4 years and 9 months; but every month was occupied by some grand achievement. "He put an end to the Gothic war, chastised the Germans who invaded Italy, recovered Gaul, Spain, and Britain out of the hands of Tetricus, and destroyed the proud monarchy which Zenobia had erected in the East, on the ruins of the afflicted empire." He wisely withdrew the Roman legions from the frontiers of Dacia, which province he totally abandoned to the Goths and Vandals; he restored the Illyrian frontier, and, on the Alemanni flying to arms, he defeated them with prodigious slaughter, and ultimately almost annihilating them as a nation, reduced them to perfect submission. His war against Zenobia, which was, perhaps, the greatest and most difficult of all his enterprises,—for, as is ever the case in conflicts between western military prowess and the nations of the East, the climate fought against the invaders, and aided the clouds of oriental horse, and the archery of the enemy,—was conducted, with wonderful ability, to perfect success, but was sullied by barbarous cruelty; and the judicial murder of Longinus, the critic and statesman, will ever reflect disgrace on the names of the queen who betrayed, and the emperor who condemned, him. On his return from the conclusion of this brilliant achievement, which seemed to have secured the peace of the world and prostrated the last enemy of Rome, after his triumph, which was the most glorious of all the 800 which decorated the annals of regal, republican, and imperial Rome, a strange and unaccountable rebellion broke out within the very walls of Rome. It was an actual civil war while it lasted; for, before it was suppressed, a pitched battle was fought on the Cælian hill, in the very centre of the city, in which the sedition was indeed suppressed, but not until 7,000 veteran soldiers of the Danubian army, who were present only for the occasion of the triumph of the emperor, were slain in the contest. After his victory Aurelian gave way to rage and to the natural sternness of his temper, which had been hardened by long familiarity with scenes of blood, cruelty, and torture. The vengeance which he took for the unprovoked rebellion was barbarous, unsparing, and impolitic to the last degree. "The executioners," sang a contemporaneous poet, "were fatigued, the prisons were crowded, the senate lamented the death or absence of its most illustrious members." But the vengeance and cruelty of Aurelian were fatal to himself; a conspiracy was formed against him, and, on his march from

Byzantium to Heraclea, he was attacked by the officers immediately about his own person, and after a short resistance, was slain by the hand of Mucapor, a general whom he had always loved and trusted. "He died," says Gibbon, "regretted by the army, detested by the senate, but universally acknowledged as a warlike and fortunate prince, the useful, though severe, reformer of a degenerate state." The observation of one of the most sagacious of his successors, Diocletian, appears most to the point: "Aurelian," he said, "was better suited to the command of an army than to the government of an empire." A peasant, and a legionary soldier of a frontier army, all his sympathies were with the plebeians and the legionaries, and against the senate, the nobles, and the prætorian guard. He carried the rustic into the senate-house and the private trooper into the general's tribune. His reforms were harsh rather than rigid; his judgments cruel, rather than severe. His intentions were probably good, but his natural temper was austere; and condition and habit, which are a sort of second nature, adapted him rather for a leader against a barbarous foe than for the head of a civilized empire. II. **CELIUS**, a native of Sicca, in Numidia, a medical writer of great learning, understanding, and accuracy. With the exception of Octavius Horatianus, who lived in the days of the emperor Valentinian, he is the only writer of the medical sect called Methodists whose works are extant. His account of the horrible complaint hydrophobia is particularly valuable, coinciding in almost every respect, as to cause, diagnosis, effect, and treatment, with the most approved modern theories and practice, except that he does not advise excision or the use of the actual cautery.

AURELIUS, MARCUS. See **ANTONINUS**.

AUREUS, or **DENARIUS AUREUS**, the first gold coin struck in Rome, 207 B. C., from the booty taken from the Carthaginians, 62 years after the introduction of silver. It was worth 25 *denarii* or 100 *sesterces*. In later times it diminished in value, and was called *solidus*. It had different values at different periods of the Roman empire.

AURICULAR CONFESSION. See **CONFESSION**.

AURIFABER (the Latinized name of Goldschmidt, or Goldschmidt), **JOHANN**, born at Mansfeld, 1519, studied at Wittenberg, became Luther's amanuensis, and was present at his death. In the Smalcaldic war he was chaplain to a Saxon regiment; in 1551, court chaplain of the elector, Frederick of Saxony. After 1562, he collected the unpublished manuscripts of Luther, and was one of the collaborators of the Jena edition of Luther's works. He edited the *Epistola Lutheri* and the "Table Talk." In 1566 he became pastor at Erfurt, and died 1579.

AURIGA. I. In Roman antiquity, the charioteer at the public games. Originally, only slaves, freedmen, or aliens, were *auriga*; but later, the Roman citizens of the best families condescended to occupy that position. II. In astronomy,

the Wagoner, a constellation of the northern hemisphere. In Bode's catalogue, it contains 261 stars.

AURILLAC, a town of France, capital of the department of Cantal, in a valley on the Jourdanne. It is walled and well built, with wide streets, kept clean by the overflowing of a large reservoir, into which two fountains discharge. Along the bank of the river is the public walk (Le Gravier), at one extremity of which there is a splendid bridge spanning the river. The old buildings of Aurillac include the castle of St. Stephen, the church of St. Giraud, the church of Notre Dame of the 18th century, and the college which contains a valuable library, and a cabinet of mineralogy. The manufactures are copper utensils, jewelry, woollen stuffs, blondes, laces, and paper. Pop. about 11,000.

AURIOL, PIERRE D' (in Latin, **AURIOLUS**), a French theologian, and native of Toulouse, lived at the commencement of the 14th century. He was named the eloquent doctor, *doctor fecundus*. He was the pupil and successor of Duns Scotus in one of the chairs of the university of Paris. D'Auriol was a warm defender of the doctrine of the immaculate conception of the Virgin Mary, and wrote a tract thereupon.—**BLAISE D'**, a French poet and lawyer, a native of Castelnaudary, died at Toulouse, July, 1540. He taught canon law at the university of Toulouse, and harangued Francis I. on his passage through that city, which gained him the honor of knighthood. Some astrologers having prophesied a universal deluge for the year 1524, D'Auriol was credulous enough to believe them, and built an ark where-with to save himself.

AURIVILLIUS, KARL, a Swedish orientalist, born at Stockholm, in 1717, died in 1786. He mastered the Syriac, Arabic, Sanscrit, and other oriental languages, by long-continued studies at Jena, Rome, Paris, Leyden, and Upsal. He resided at Upsal after the year 1754, at first giving private instruction in the poetry of different nations; but in 1772, obtained what had long been the goal of his ambition, the professorship of oriental languages in the university of Upsal. He succeeded Linnæus as professor of the academy of sciences in that town, and was a member of the commission for preparing a new translation of the Bible into Swedish.

AURORA (in Greek, *Eos*), the goddess of the morning, was the wife of Astræus, and the mother of the winds. She carried off Orion to the island of Ortygia, and detained him there till he was slain by Diana. She bore away Cephæus, and had by him a son named Phaëthon. She took to her embraces Tithonus, son of Laomedon, king of Troy, and gave birth in consequence to Memnon and Æmation. Aurora is represented in various ways. Sometimes she appears in a saffron-colored robe, with a wand or torch in her right hand, emerging from a golden palace, and ascending a chariot of gold. Sometimes she appears in a

flowing veil, which she is in the act of throwing back, opening with her roseate fingers the gates of morning. And sometimes we see her as a nymph, weaving a garland and standing in a chariot drawn by winged horses, with a torch in one hand and flowers in the other, which she scatters as she goes.

AURORA BOREALIS, also called **NORTHERN LIGHTS**, **STREAMERS**, luminous appearances, occasionally seen in the sky of the temperate latitudes during the absence of the sun, and more frequently and in greater brilliancy, in the polar regions. Instead of northern lights they should therefore be called polar lights. They appear in the northern hemisphere at irregular intervals, generally soon after sunset, and often like a twilight continued into the night, but changed in position more to the north; and again they appear in the form of a cloud, which is sometimes dark with its upper edge fringed with a flickering light. This extends along the northern horizon, parallel, it may be, with it, or arched like a rainbow. Its appearance is often like a bank of fog. As the night advances the light becomes brighter. From the edge of the cloud pencils of light, in diverging rays, begin to be sent upward, or to issue in groups from portions of the arch in lines that would meet at its centre. The northern sky gradually becomes overspread with streamers of light, the motions of which become more and more perceptible, as they shoot upward or appear here and there in unexpected places. Bodies of light, from which radiate flickering beams, appear and disappear in different parts of the heavens. The whole sky is alive with an unsteady motion, or undulates rapidly with a motion like that of grass waving in the wind. So swift is the movement, that it passes from the horizon half way to the zenith in half a second of time. In a still summer night upon one of our great northern lakes, and more especially upon Lake Superior, these phenomena may be observed in great perfection. Floating in a small boat remote from the shore one seems to be enveloped in the meteor as in a fog. Nothing is visible but the unearthly light strangely flickering, appearing here and there, filling the whole atmosphere, and keeping it all in tremulous movement. The effect is bewildering. One's ideas of space, distance, progress, and direction, are as confused as if floating among dense clouds in a balloon. Often this continues through the night, disappearing with the early dawn of day. But the appearances of the aurora are too varied for description to convey a clear idea of them. The lights at times assume various colors, as different shades of orange, green, gray, and red. When they meet at the zenith and form there a corona, this has been seen of green, blue, and purple colors. The red tinge has been known to overspread a large portion of the sky, giving to it the color of blood, and when the ground was covered with snow, imparting to this, too, the same hue. Such appearances in ancient times were regarded with

great horror; and, indeed, in our own country, so late as the great aurora of 1837, the strange light was very generally a source of terror to the ignorant. The streamers of light are converted by the imagination into the forms of familiar objects in motion. The inhabitants of the north of Scotland call them merry dancers. The ancient Greeks and Romans regarded their appearance as portentous of great events, and saw in their varying forms

*Fierce, fiery warriors fight upon the clouds,
In ranks, and squadrons, and right form of war.*

They even imagined that sounds of trumpets and arms came from them. Nor is Pliny the only authority for the statement that sounds are emitted by the aurora. So many at later times have described a noise of rumbling, hissing, murmuring, and crackling, as coming from the meteor, that it is not altogether improbable that sounds may be at times sent forth from it, though these have not been heard by the most distinguished arctic travellers who have treated upon the subject. Dr. Richardson, who gave particular attention to the aurora in the arctic land expedition of Captain Franklin, heard no sounds, but admits that the united testimony of the different native tribes, and of the oldest residents at the European ports, induced him to believe that its motions are sometimes audible. Henderson remarks that in Iceland, when the convulsions are particularly quick and vivid, a crackling noise is heard, like that of the sparks emitted from an electrical machine. Blagden and Gmelin, Nairne and Cavallo, all speak of the sound proceeding from the aurora. This must, however, be still considered an undetermined question.—The times of appearance of the aurora, as far as they are recorded, appear to have been very irregular. The earliest accounts are those of Aristotle, who well describes the peculiar phenomena resembling flame mingled with smoke seen on calm nights, or like burning stubble seen afar off, and presenting purple, bright red, and blood-colored hues. In many of the ancient classics an occasional reference is made to it, and in the chronicles of the middle ages it is frequently recognized in the superstitious descriptions of the gleaming swords of the fighting aerial hosts. In 1560, according to authentic descriptions, it was seen in London in the form of burning spears. In 1574 it was seen by Stow on Nov. 14. He states in his annals, "that strange impressions of fire and smoke were seen in the air to proceed forth from a black cloud in the north toward the south; that the next night the heavens from all parts did seem to burn marvellous ragingly, and over our heads the flames from the horizon round about rising did meet, and there double and roll one in another, as if it had been in a clear furnace." The next year (1575), it was twice seen in Holland, and the following description of its second appearance is given by Cornelius Gemma, a professor in the university of Louvain: "The form of the chasma of Sept. 28, following immediately after sunset, was indeed less dreadful, but

still more confused and various, for in it were seen a great many bright arches, out of which gradually issued spears, cities with towers, and men in battle array; after that there were excursions of rays every way, waves of clouds and battles, mutually pursued and fled, and wheeling round in a surprising manner." In 1764 a work was published by M. de Mairan, entitled *Traité physique et historique de l'aurora boreale*, in which are collected the various recorded observations of the phenomenon from the year A. D. 583. From this it is seen that in the latter half of the 17th century its appearance suddenly increased in an extraordinary degree, and so continued very frequent to the year 1745, when it suddenly diminished for the next 9 years. On the whole, however, it is probable that no period has furnished more brilliant displays of the aurora than the last 100 years, and the most interesting portion of this period in this country was in the years 1836, 1836, and 1837. In northern Europe, Iceland, Sweden, and Norway, it is of very common occurrence, and as seen and described by Mr. Bayard Taylor in the winter of 1856-'57, of wonderful beauty; and yet it is said that prior to the year 1716 it was considered a great rarity by the inhabitants of Upsal; and Torfæus, the historian of Denmark, and an Icelandic, writing in 1708, speaks of his recollection of the time when the meteor was an object of terror in his native island. In the eastern parts of Asia, on the contrary, it is said to have become less frequent and less brilliant in recent times. In the summer months, according to the treatise of M. de Mairan, it is comparatively of rare occurrence, and the greatest number of recorded observations are in the months of October, March, and September. Prof. Olmstead of New Haven, who has, in several of the volumes of the "American Journal of Science," and in the 5th vol. of the contributions of the Smithsonian institution, furnished many important papers upon this subject, distinguishes the appearances of the aurora as occurring in secular periods, at intervals of 60 to 65 years, and continuing rather more than 20 years. For the first 10 years the displays increase in intensity, and afterward decline, to the termination of the period. Such a period he regards as having commenced on Aug. 27, 1827. But there have certainly been many fine displays of the phenomenon in recent years beyond the limit he has assigned to each period. The preceding period was from 1760 to 1781.—Of the appearances in the southern hemisphere there are but few recorded observations. It was discovered by Mr. Foster, who made the voyage around the world with Capt. Cook, and who witnessed it in Feb. 1778, in lat. 58° S. He and some other later observers agreed in its appearing there of a whitish color, and without the various tints which distinguish it in northern latitudes. This has since been described in the English works as distinguishing the aurora australis from the northern lights; but Commodore Wilkes, of the U. S. exploring expedition,

makes frequent mention of as beautiful colored displays of the aurora in the antarctic regions as have been witnessed in the arctic. At midnight of Feb. 9, 1840, in lat. 65° 8' S. and long. 125° 19' E., was "a splendid display of the aurora australis, extending all around the northern horizon from W. by N. to E. N. E. Before its appearance a few clouds only were seen in the S. E., on which the setting sun cast a red tint that barely rendered them visible. The horizon, with this exception, appeared clear and well defined. The spurs or brushes of light frequently reached the zenith, converging to a point near it. Although no clouds could be seen in the direction of the aurora before or after its appearance, yet when it was first seen there appeared clouds of the form of massive cumuli, tinged with pale yellow, and behind them arose brilliant red, purple, orange, and yellow tints, streaming upward in innumerable radiations, with all the shades that a combination of these colors could effect. In its most brilliant state it lasted about 20 minutes. . . ." On March 17, in lat. 64° S. and long. 97° 37' E., the magnetic variation the day previous 56° 21' westerly, between 11 and 12 at night, was another exhibition of the same character. "It exceeded any thing of the kind I had before witnessed; its activity was inconceivable, darting from the zenith to the horizon, in all directions, in the most brilliant coruscations; rays, proceeding as if from a point in the zenith, flashed in brilliant pencillings of light like sparks of electric fluid *in vacuo*, and reappeared again to vanish; forming themselves into one body, like an umbrella or fan shut up; again emerging to flit across the sky with the rapidity of light, they showed all the prismatic colors at once, or in quick succession. So remarkable were the phenomena that even our sailors were constantly exclaiming in admiration of its brilliancy. The best position in which to view it was by lying flat upon the deck and looking up. The electrometer was tried, but no effect perceived. The star Canopus was in the zenith at the time, and, though visible through the aurora, was much diminished in brightness."—Various estimates have been made of the height of the aurora above the surface. It has been supposed from its not changing its position with the rotation of the earth that it belongs to the atmosphere, and is carried along with it. But from the great surface of country over which it has been visible at the same time, with the same general appearances, Dr. Halley and others have been disposed to ascribe to it a prodigious height. When the aurora assumes a distinct form, like that of a corona, or of an arch, as it sometimes does, and this is visible at different points upon the surface, its height can be calculated from observations carefully made at these places. Such an arch was observed on March 29, 1826, in a line crossing the magnetic meridian at right angles; and from its position in relation to Whitehaven and Warrington, 2 places in England, 88 miles distant from each other on this meridian,

its height was calculated by Mr. Dalton of Manchester, to be nearly 100 miles above the surface. Similar observations have been made in this country by Prof. Olmstead, Prof. Alexander C. Twining, and others, in 1885 and 1886. In August of the latter year the two gentlemen named, being at points 23 miles apart, observed peculiar forms of the aurora, which they regard as the same objects seen by both. The height, calculated by the angles of elevation, was 144½ miles. The observations of Prof. Twining, made with others in Dec. 1885, indicate the height to have been certainly not less, and probably much more, than 42½ miles, and in May, 1886, to have exceeded 100 miles, and probably to have amounted to the result obtained at the same time by Prof. Olmstead, of 160 miles. The conclusion at which Prof. Olmstead arrives is that the auroral arches seldom, if ever, fall below an elevation of 70 miles, and do not often exceed 160 miles. The arctic travellers, Dr. Richardson, Captains Franklin and Parry, and Lieut. Hood, regarded the position of the aurora as low in the atmosphere—below the hazy form of cloud which produces a fog-bank in the horizon. Dr. Richardson also frequently observed the lower surface of the clouds illuminated by the polar lights, which could not be if these lights were at such an extremely high elevation as many have supposed. Capt. Franklin, too, noticed the passage of a brilliant mass of light, variegated with the prismatic colors, between the earth and a cloud, concealing the latter until the coruscation had passed by. Ross and Parry and others also saw a bright ray of the aurora shoot downward from a northern light they were admiring, till it intercepted the view of the land, which was less than 2 miles distant. This is an interesting feature connected with the aurora, and ought to receive the particular attention of any, who are fortunate in being observers of its most remarkable displays. The direction and apparent height of the object may easily be noted and recorded, the former as taken by the compass, or better, by its position in relation to particular stars, which will also determine the height. An isolated observation of this kind will have no value; but, in connection with those made by other persons, in other places, may prove of great interest. When the aurora appears in the form of an arch, the position of its boundaries ought also to be noticed, as they appear among the stars. The position of the arches at right angles to the magnetic meridian, crossing it as parallels of latitude round the magnetic axis, is a subject of especial interest, on which more data are very desirable. The line of this axis in any region is the north and south line indicated by the magnetic needle. Every marked change in the appearance should be noted, with the exact time of its occurrence, and as many particulars in relation to the clouds as may be. The British association has called the attention of observers to the recording of these phenomena, and published recommendations as to the points partic-

ularly important to be noticed, in vol. iv. of its reports.—It is observed that the magnetic needle is affected by the polar lights under some circumstances; it is violently agitated; it oscillates, and is deflected to the east or to the west, when the beams or fringes of light are in the same plane as the dip of the needle, and moreover is directed toward that point where the rays from the horizon concentrate. This fact connects the phenomenon directly with magnetism, which is developed by the electrical action taking place in the atmosphere. While the northern lights continue brilliant the air appears to be highly charged with electricity. An experiment with the electrical machine shows, moreover, a singular resemblance in the phenomena developed to those we witness in the heavens, and still more the condition of the atmosphere as to density favorable for the development of the aurora. A glass tube 8 feet long, hermetically sealed, and partially exhausted of air, laid along the conductor of an electrical machine, becomes illuminated from end to end, and continues so for a considerable time after it is removed from the conductor. When, after this, it is drawn through the hand, the light becomes intense throughout its length, and will continue for some time to flash from it at intervals, if the tube be held steadily by one extremity. If grasped by the other hand flashes of light will dart from one end to the other, and so continue for a considerable time. But the experiment will not succeed except the air be of the proper degree of density. Such phenomena, seeming to connect the aurora directly with electrical excitement in the atmosphere, and this requiring a density greater than that of its upper strata for such excitement to take place, the estimated heights of the northern lights have been regarded by many scientific men with incredulity. Prof. Olmstead considers that he has removed the objection by assigning to the phenomenon an interstellar or cosmical origin, though the exhibitions take place in the upper regions of the atmosphere. The nebulous matter, like that which furnishes the material of the meteoric showers, or the zodiacal light, and is known to exist in the planetary spaces, is probably the cause of the auroral displays. The periodical returns of the phenomena indicate such a position; so, too, its rapid motion, which exceeds that of light or electricity; and again, the extent of surface, covering many degrees in longitude, over which the phenomenon is seen at the same time. The light he regards as emitted by the friction of the earth plunging, with its atmosphere, through this vapor, the velocity being sufficient, notwithstanding the rarity of the materials, to develop this luminosity; and the magnetic phenomena he explains by supposing, with Biot and Dalton, that the vapor is metallic, probably ferruginous, a supposition to which the stones of iron precipitated upon the earth in the form of *aérolites* lend some plausibility; as also the fact that by the intense heat generated by the hydro-oxygen blowpipe, the

metal is volatilized into vapor of extreme rarity. It was suggested by Mairan in his work, before referred to, that the zodiacal light might afford at once the material of the aurora and of meteoric showers. It has been observed by operators of the Bain or chemical telegraph, that very singular effects are produced by the aurora upon the telegraph wires. The atmospheric electricity generated during thunderstorms passes from the wire to the chemically prepared paper, emitting a bright spark, and a sound like the snapping of a pistol. It never remains long upon the wires, though it travels sometimes 40 or 50 miles before discharging itself. But the electricity produced by the aurora passes along the wires in a continuous stream with no sudden discharge—effecting the same result as that by the galvanic battery. A colored mark upon the paper is made by the positive current of the aurora as by the positive pole of the battery; the negative current on the contrary produces a bleaching effect. Preceding the appearance of the aurora, faint blue lines appear on the paper, which gradually become stronger and darker so as to burn through several thicknesses of it. The effect then disappears, and is soon followed by the bleaching process, which entirely overcomes the artificial current of the batteries. When these effects have been observed, the aurora follows, and presents some of its most beautiful displays along the lines of these telegraphs; and so familiar have the operators become with the disturbances which the aurora causes, that they can predict its appearance with much certainty. They regard the electricity generated by it as precisely that of the electro-galvanic battery, which is distinguished by its voluminous current without intensity of action, differing from atmospheric electricity, or the kind developed by friction, which may be dissipated by placing wire conductors leading to the ground in close proximity to the line of wires.—It has already been observed, that one of the most interesting periods of the display of the aurora was during the years 1885, 1886, and 1887. The most brilliant exhibitions in this period were on Nov. 17, 1885, April 22, 1886, Jan. 25, and Nov. 14, 1887. Prof. Olmstead observes of the first, that "it was distinguished for exhibiting on a grand scale nearly all the varieties of the aurora ever observed in our climate, including the bank of auroral vapor in the north—the streamers—the arches—the corona, formed around the magnetic pole of the dipping needle—and the undulations or merryancers; while the whole were set off by that peculiar display of crimson light, which usually attends the most remarkable displays of the aurora. The second, that of April 22, was distinguished above all others which I have witnessed for the auroral waves. They began to be observed before the end of twilight, and continued nearly all night, following each other with astonishing celerity. . . . The aurora of Jan. 25, was the most magnificent of all. (This was published previ-

ously to the occurrence of that of Nov. 14, 1887.) It resembled that of Nov. 17, 1885, in many particulars, but its colors were brighter and more diversified, and its columns arranged with more symmetry around the magnetic pole, supporting a canopy of unrivalled grandeur." On Feb. 18, of the same year, the northern lights appeared in great beauty at London, Belfast, Paris, Göttingen, and other places in Europe, and the same evening were noticed also from New Haven, illuminating a portion of the heavens toward the N. N. E. with a beautiful rose red light. In Europe, as at New Haven, the magnetic needle was observed to be sensibly deflected and agitated during the continuance of the phenomenon. On the morning of Nov. 18, occurred one of the periodic returns of the meteoric showers, such as had been annually witnessed for the 6 preceding years. The next day a fall of snow at the north covered the surface of the country, as observed by the same writer, quoted above, with a mantle of the purest white. In the evening "about six o'clock, while the sky was yet thick with the falling snow, all things suddenly appeared as if dyed in blood. The entire atmosphere, the surface of the earth, the trees, the tops of the houses, and in short the whole face of nature, were tinged with the same scarlet hue. The alarm of fire was given, and our vigilant firemen were seen parading the streets in their ghostly uniform, which assuming the general tint, seemed in excellent keeping with the phenomenon." Such was the appearance exhibited over a large portion of the country where the clouds were not so dense as to obscure the auroral display. The false alarm of fire was not confined to New Haven, and superstitious fears of some impending awful conflagration generally prevailed among the ignorant throughout the country. It is remarkable of this grand exhibition that it was observed over the whole eastern portion of the United States as far south as Culloden, in Georgia, in lat. $32^{\circ} 45' N.$, and also in Ohio and at St. Louis, Mo. At the north, as observed particularly in New York, the exhibition ceased after having been seen for an hour, again appeared at half past seven and lasted for more than half an hour, and returned a little before 9 in innumerable bright arches, shooting up from the northern horizon, of the most brilliant scarlet above, and below intensely white. They soon appeared also at the south, and extending upward to the zenith the whole firmament above presented the appearance of a canopy of moving brilliantly colored light resting around the horizon upon an obscure bank—all the more dark and mysterious for the vivid display above. At half-past 10 all this had disappeared; but at half-past 1 there was another return of the phenomena, lasting for more than an hour. At Staten island, in New York harbor, the spectacle is described as the most magnificent ever beheld. The illumination was so great, that objects outside of Sandy Hook were seen as clearly as at

midday, and the city of New York appeared to be only a mile or two distant. The influence of the aurora upon the magnetic needle was observed to be quite irregular as to the direction of the inflection. The needle was violently agitated, often moving 80 minutes in 8 seconds of time, and ranging in its vibrations over nearly 6 degrees.—Most interesting details of this phenomenon may be found in the observations recorded by several scientific writers in the "American Journal of Science;" the 5th vol. of the Contributions of the Smithsonian institution; in Halley's papers in the "Philosophical Transactions," 1716 and 1719; the treatise of M. de Mairan, already referred to; Cavallo's papers in the "Philosophical Transactions," 1781; and papers of several other distinguished men in 1790; Dalton's "Meteorological Observations," 1798; the papers of the Rev. James Farquharson in the same, 1830. In the 10th Ann. Rep. of the Smiths'n inst'n are full directions for observing the aurora. Maps of the heavens are furnished by the inst'n for the use of observers, to be filled and returned by them.

AURUNGABAD, a city and ancient province of Hindostan, part of the division known as the Deccan. The city is about 300 miles E. N. E. from Bombay. Pop. about 60,000. It was an unimportant village until the time of Aurungzebe, who, liking the situation, made it a favorite residence. It is situated on the banks of the Kowlah, a mountain stream. Owing to the vicinity of rice-grounds the place is not healthy, the inhabitants being subject to intermittents. The town itself is well laid out, but the buildings are in a sadly dilapidated condition. There is a mausoleum erected by order of Aurungzebe, to the memory of his daughter, after the design of the Taje Mahal, at Agra. The town is supplied with water by means of conduits and distributing pipes to various points in the city, and a considerable trade is carried on.—The province contains about 50,000 square miles, and was incorporated with the Mogul empire in 1633. In more recent periods it belonged partly to the Mahrattas and partly to the Nizam; at present the greater part is British. The soil is fertile, and the temperature is liable to very sudden changes. The Godavery, one of the most sacred rivers of India, takes its rise in the hill district of this province, from which also proceed various other rivers of less importance. The celebrated caverns of Elora are situated in this province.

AURUNGZEBE, the last great emperor of the Mogul dynasty in India, born Oct. 22, 1618, died at Ahmednuggur, Feb. 21, 1707, in the 49th year of his reign. He was appointed by his father, the cruel and unfortunate Shah Jehan, to be viceroy of the Deccan, and in this provincial office he concealed his early formed and warmly cherished purpose, to mount the imperial throne. Here he exercised himself in the command of armies, affected an entire indifference for worldly things, in his zeal for the austere practices of the Mussulman religion, and

prepared for the triumph of his ambition by amassing great wealth. In 1657, the emperor was taken suddenly ill, and Dara, the heir apparent, and eldest brother of Aurungzebe, assumed the administration. Aurungzebe now saw his way to the throne, of which, within a year, he took possession. He united with a younger brother in defeating Dara, and soon succeeded by his energy and treachery in putting to death all of his brothers and their sons. His father, having meantime recovered, was confined for the rest of his life a prisoner in his own palace, and Aurungzebe grasped the imperial power without a rival, in the midst of the terror and astonishment occasioned by his atrocities. His reign was the most brilliant period of the domination of the race of Akbar in India, and his empire included nearly all the peninsula of Hindostan, with Cabool on the west, and Assam on the east. The 10 first years of his administration were marked by a profound peace, and his wisdom was especially signalized in the measures which he took in anticipating and assuaging a famine, and in suppressing an insurrection of Hindoo devotees headed by a female saint. A greater misfortune to him was the rise of the Mahratta empire, the foundation of which had been almost imperceptibly laid by an heroic adventurer named Shevaje. Against this leader Aurungzebe sent in vain his most experienced generals, and he therefore marched into the Deccan himself to superintend the war. He resided in the Deccan 22 years, displaying his power by the splendor of his marches and encampments, subduing the Carnatic, swaying an empire which in wealth and population was probably unsurpassed by that ever held by any other monarch; and at his death, foreseeing domestic warfare among his sons, and the probable downfall of the Mogul dominion. The proper name of Aurungzebe was Mohammed, and that by which he is commonly known, meaning the "ornament of the throne," was given him by his grandfather. He himself assumed and preferred the title of "conqueror of the world," and he was accustomed to have carried before him a globe of gold as his symbol. Yet to show that he as yet held but three-fourths of the earth, he used to tear off a corner from every sheet of paper which he used in his correspondence. His great talents were exhibited in every part of his government, and India owes to him several of her finest bridges, hospitals, and mosques. In his personal habits, he was remarkable for an ascetic simplicity; and in his zeal for the Mohammedan faith, he became a persecutor of the Braminical Hindoos. His last years were embittered by the memory of the crimes which he had deliberately perpetrated to attain the imperial power, and by the thought that the unparalleled grandeur and power which he had enjoyed were to lead only to the decline of the empire founded by the genius of Akbar.

AURY, LUIS DE, a naval officer of New Granada, distinguished by his conduct at the siege of

Carthagena, where he commanded the naval forces of New Granada. On Sept. 1, 1816, he accompanied José Manuel Herrera to Texas, as commodore of the united fleets of the republics of Mexico, Venezuela, La Plata, and New Granada. On Sept. 12 a government was organized, and the country solemnly annexed to Mexico. Aury, after taking his oath of allegiance to the Mexican government, was appointed by Herrera civil and military governor of Texas and Galveston island, and held this office until 1817, when he relinquished it on account of the incursion of the Lafitte buccaneers, who, during his temporary absence on an expedition to Soto la Marina, a Mexican town on the left bank of the Santander, had taken possession of the island and set at naught his authority. This expedition was conducted by Aury, in conjunction with Col. Perry and Gen. Mina. The town was seized, but Aury, after landing his force, returned to Texas, his want of harmony with the other commanders preventing his further coöperation in the enterprise. In July, 1817, shortly after resigning his office of governor, we find Aury assisting Sir Gregor M'Gregor in the expedition against Florida, and subsequently he displayed much zeal in the cause of the patriots of the South American republics. He married a lady of New Orleans, where he resided for some time. Subsequently he removed to Havana. (See Yoakum's "History of Texas," New York, 1856.)

AUSCULTATION (Lat. *ausculto*, to listen), a branch of medical art by which the states and motions of internal organs are discerned through the sounds which they produce. Pulsations, respirations, and the vibratory movements in the body, produce sounds which are inaudible at a distance, but which may be distinctly heard by placing the ear close to the walls of the chest, and other parts of the external frame. The heart beats strongly many times per minute, and each pulsation gives a shock to the surrounding parts, and to the blood within the vessels, which shock creates a sound, and that sound is audible at a short distance. At every breath the air is drawn with force into the lungs, and rushes out again with equal power and velocity when expelled through the air passages by respiration. The rushing of the air into the lungs produces one kind of sound peculiar to the act of respiration, and the rushing out again, another sound peculiar to expiration.—In a state of healthy action, the sounds of the heart and those of the lungs and air passages, are of a peculiar nature, and a little practice enables the ear to become familiar with each special sound. In a diseased state, the action of both heart and lungs is modified, to some extent, and the sounds produced are also modified in a peculiar manner. The art of auscultation consists mainly in distinguishing the healthy or unhealthy state of these organs, from the sounds produced by healthy and unhealthy action. A little practical experience is sufficient to render a good

ear familiar with all these various sounds, and the peculiar states and modes of action which produce them; but a dull or inexperienced ear requires some aid to distinguish one sound from another; and even a well-practised ear may sometimes need convenient aid, to make a proper diagnosis. Such artificial aid was first invented by a French physician, Laennec. "In 1816," says Laennec, in his work on "Mediate Auscultation and Diseases of the Heart and Lungs," "I was consulted by a young woman affected with the general symptoms of disease of the heart. In her case, percussion of the walls of the chest and application of the hand, were of no avail, because she was exceedingly fat. The immediate application of the ear being objectionable, I happened to recollect the great distinctness with which we hear the scratch of a pin at one end of a piece of wood, by applying our ear at the other end. This well-known fact in acoustics led me to think it might be turned to account on the present occasion. I rolled a quire of paper into a kind of cylinder, applied one end of it to the patient's chest, and the other to my ear, and was surprised and pleased to find that I could perceive the sounds and vibrations of the heart's action more distinctly than I had ever been able to hear them by the immediate application of the ear. From this moment I imagined that means might be found to ascertain the character, not only of the action of the heart, but of every species of sound produced by the motion of all the organs within the chest."—In seeking to improve the rude instruments employed in his first experiments, Laennec at length constructed that which is now in general use, called the stethoscope (from *σθησος*, chest or breast, and *σκοπεω*, to examine or explore), by the aid of which he was impressed with the belief that all the sounds of the heart and lungs being more distinctly heard, the differences between healthy and diseased action might be readily discerned, and a new light thrown on the art of diagnosis. The art of auscultation has since then made rapid progress. The physician, familiar with the sounds which are natural to the healthy action of the heart and lungs, observes a difference in certain cases of disease. The difference is peculiar, and very marked in certain cases of severe disease. Where the patient dies, the organs are examined after death, and the peculiar morbid state which caused the difference of action and of sound during life, is connected in the mind with the peculiar sounds produced by that diseased state; and hence by careful observation of unnatural sounds during life, and inspection of diseased organs after death, the sounds which correspond to healthy and diseased modes of action are well known; and to those who are familiar with the art of auscultation, the state of an organ may be known from the sound which it produces, as well as if it could be seen through a transparent medium.—Auscultation is very useful in obstetrics, as well as

in diseases of the heart and lungs. In difficult cases of parturition, it is often necessary to know whether the child be dead or alive in the womb, before delivery. After the 5th month of pregnancy, the pulsations of the fetal heart may be distinctly heard, and the "placental murmur," caused by the uterine circulation of the blood, may also be distinguished by the ear. The stethoscope is very useful in such cases, and the art of auscultation may now be deemed one of the most important means of diagnosis.—Percussion is a branch of auscultation by which artificial sounds are obtained as a means of discerning the state of the parts from which these sounds proceed; but where the natural sounds of motion can be distinctly heard, they are often more to be relied on than the artificial sounds of percussion, although the latter are, in many cases, very useful; particularly in denoting the presence of fluids, and the nature of peculiar tumefactions, in the organism. The art of auscultation is of recent date, but it was long believed to be a useful aid in diagnosis. In the middle of the 17th century, Hooke, in his posthumous works, observes that "there may be a possibility of discovering the internal motions and actions of bodies by the sounds they make. . . . I have been able to hear very plainly the beating of a man's heart; and it is common to hear the motion of the wind, to and fro, in the guts. The stopping in the lungs is easily discovered by the wheezing. As to the motion of the parts, one among another, becoming sensible, they require either that their motions be increased, or that the organ be made more nice and powerful to sensate them as they are; for the doing of both which I think it is not impossible but that, in many cases, there may be helps found." In 1761, Leopold Avenbrugger, a German physician, residing at Vienna, published a small volume, in Latin, explaining an artificial method of producing sounds in various regions of the body, by which the physician might judge of the state of the subjacent parts. This method was percussion. The book remained almost unknown until 1808, when Corvisart translated it into French, and made the method known to all the countries of Europe. The practice of percussion has since become general, and, in many cases, is found highly useful. The method of studying diseases from sounds, made by percussion, led to the method of observing sounds made naturally, by the action of the heart and lungs. Corvisart took up the subject with great zeal, and 8 of his disciples, Double, Bayle, and Laennec, continued the same course. In speaking of the sounds produced within the chest by respiration, Double observes "that we must apply the ear closely to every point of all its aspects, by which means we can distinguish, not merely the kind and degree of the sound, but even its precise locality." This practice became general among physicians, and is often used, at present, in preference to the stethoscope, by those who

have an acute sense of hearing; but the stethoscope is indispensable, as an aid to a dull ear, or as a convenient artificial means of hearing the sounds of the heart and lungs, where patients object to removing the outer portions of their dress, or allowing the head of the physician to be placed in contact with the walls of the chest.

AUSENOES, in ancient geography, *Avenis*, a savage people of Libya, who, according to Herodotus, had their women in common. The children were brought up by their mothers till they were able to walk, after which they were introduced into an assembly of men, who met every 8 months, and the man to whom any child first spoke adopted the child as his own.

AUSONES, the name of an ancient tribe, or people, of Italy, supposed to be among those which have the greatest claim to consider themselves autochthonous, or indigenous to the soil, if such a thing can be predicated of any people. Their origin and the account of their earliest settlement, or location, in the peninsula, goes back far beyond the period of authentic history, and is lost in the mists of antiquity. As usual, in order to account for these, national pride has had recourse to fable; and that fable, also as usual in all the western nations of Europe, has reference to events posterior to, and consequent on, the events of the Homeric war of Troy—a coincidence so remarkable that it has led many historians to believe in the reality of some great upheaval of society, leading to a widely spread migration of the peoples from the west of Asia and eastern parts of Europe, still further to the westward, which may have occurred, more or less remotely, before the historic ages, and of which the events may have been preserved, or at least shadowed out in some slight degree, much obscured by mythic inventions, in the almost universal traditions of all the nations, from Italy to the extremities of western Europe. This tradition, in the present instance, makes the Ausones to be descendants of Anson, the son of Ulysses and Calypso, which is of course wholly fabulous, since there were never any such persons as either of those named as parents. It is possible that the form of this legend may simply indicate that the tribe was believed to be descended from the marriage of Greek adventurers with strange foreign women, either of Italian or island origin; which is probably true of most of the peoples of southern Italy; since the early Greek colonists were not colonists, in the true sense of the word, who brought their wives and households with them, but mere piratical adventurers, who taking seizin, as the Normans would have called it, of the soil, won to themselves both lands and women with their swords. They are held, by Niebuhr, to be a portion of the great Oscan nation, whose existence forces itself on the student of early Roman history at every town, while their origin, their antiquities, their language, are among the unsolved, and probably insoluble, riddles of the past.

AUSONIA, the great southern division of Italy, the next below Italia Propria, called in later times Magna Grecia, in consequence of its being colonized, peopled, and governed by emigrants of that country, of which it adopted the language, the arts, the refinements, and, in latter days, the effeminate softness. Before this period, or succession of periods, it seems generally to have been called Ausonia, but more especially along the southern and southwestern coasts, from the Ausones, the tribe described immediately above, who, whatever their origin, spread themselves over all the southern coasts, from Campania and the mouths of the Liris, or Garigliano, downward to the toe of the promontory and the waters of the great Sinus Tarentinus, or bay of Otranto. The more eastern parts, including the shores of the heel and spur of the boot, up to the gulf of Manfredonia, were known to the Greeks as Japygia, being the lands whence the west wind, *Japyx*, blew to them across the lower part of the Adriatic; but this was a geographical, whereas Ausonia is an ethnographical title. The sea bordering on the southern shores of Italy, afterward called the Lower or Tyrrhenian sea, *Mare inferum vel Tyrrhenum*, lying between the Neapolitan dominions and the islands of Corsica, Sardinia, and Sicily, was anciently known as *mare Ausonium*, the Ausonian sea.

AUSONIUS, DEIMUS MAENUS, a Latin poet, grammarian, and public functionary of the latter empire, born at Burdigala or Bordeaux, early in the 4th century, died about 394. The son of a distinguished physician, and senator, he turned his attention, professionally, to the bar; but literature was his pursuit by choice. In the year 367 he was selected by the emperor Valentinian to be tutor to his son Gratian, whom he accompanied into Germany the following year. He rose successively to the honorary titles and dignities of count of the empire, quaestor, governor of Gaul, of Libya, and Latium, and lastly, in A. D. 379, of first consul. His poetry is characterized by extreme licentiousness and pruriency; and is as bald of invention, as poor in argument, as redundant in ornament, and as strongly marked by mechanical and verbal ingenuity and artifice, as can be imagined. In language it is so close an imitation of, or rather compilation from, the classic writers, that in parts it bears the character of a *canto* rather than of original composition. The writings of Ausonius have, however, their value, as establishing precisely the character and condition of letters in his time; and as possessing, in some measure, owing to his position as a courtier and the man of letters of highest degree in the empire, the nature and authenticity of poetical contemporaneous memoirs. There has been much literary discussion, approaching almost to disputing, as to the question whether Ausonius was a Christian or a Pagan, the advocates of the latter side of the argument insisting that the licentiousness and intentionally

voluptuous style of his writings, as well as the great use he has made of heathen mythological machinery in his compositions, prove him to have been, if not a pagan, at least no Christian. The best editions of Ausonius are: 1, a very rare one by Tollius, with a commentary of Scaliger, and selected notes by various critics; 2, the Delphin edition, which is excellent; and 3, the Bipont edition of 1788, which is correct and of authority.

AUSPICES (Lat. *auspicium*, from *avis*, a bird, and *specio*, inspection), the watching of the flight of birds for the purpose of divining the will of Heaven with reference to future projects or the destiny of individuals. Among the Greeks auspices were called *auspookoros*, and among all primitive nations the superstitious tendencies of the human mind have fastened upon the flight of birds, and above all, of the eagle, as a matter of deep import. The aboriginal inhabitants of this continent held this superstition in common with the Greeks and Romans. See AUGURS.

AUSSA, or HOUSSA, written also HAWASA, a town of eastern Africa, in Adel, on the sea of Babel-Mandeb. It was once an important place, but has now very little trade. The chief men of the Mudacto tribes reside here. Pop. 6,000.

AUSSIG, a little Bohemian town in the district of Leipza on the left of the Elbe, at the junction of the Bila; pop. about 3,000. It is the birthplace of the celebrated painter Raphael Mengs. His father, Samuel Mengs, presented to the town a beautiful Madonna of Carlo Dolce, which is preserved in the old church (said to have been built in 826) of the little place. Aussig was in former days a strong fortress, but in 1426 it was destroyed by the Hussites. In 1588 it was desolated by a fire; in 1689 seized by the Swedish general Bauer. The whole neighborhood is also full of historical reminiscences. The battle-field of Kulm is within an hour's walk.

AUSTEN, JANE, English novelist, born Dec. 16, 1775, at Steventon, in Hampshire, of which place her father, a highly accomplished man, was rector, died July 18, 1817. By him she was educated, acquiring a knowledge of the classics. It is not known at what time she commenced authorship. In her youth she was beautiful and graceful, but a disappointment in love determined her against marriage. "Northanger Abbey" (which was published with "Percy" after her death) was the earliest and weakest of her works, all of which, except these posthumous ones, appeared anonymously. "Sense and Sensibility" was published in 1811, and immediately obtained popularity. "Pride and Prejudice," "Mansfield Park," and "Emma," succeeded at regular intervals—the last in 1816. Her father was compelled by ill health to pass his latter years in Bath, where his daughter had ample opportunities for minute observation of the country-town society. On the death of Mr. Austen his widow and 2 daughters returned to Hampshire, and removed in May, 1817, to Winchester, where Miss Austen died

and was buried in Winchester cathedral. Her novels, which are not of the "sensation" class, have long been popular as "distinct delineations of English domestic life, with a delicate discrimination of female character." Her own opinion was that one of her novels was "a little bit of ivory 2 inches wide," on which she "worked with a brush so fine as to produce little effect after much labor." Sir Walter Scott in his private letters repeatedly eulogized Miss Austen. Writing to Joanna Baillie he mentioned her as "authoress of some novels which have a great deal of nature in them—nature in ordinary and middle life, to be sure, but valuable from its strong resemblance and correct drawing." Many years later, in his journal, mentioning his repudiation of her "Pride and Prejudice," he says: "That young lady had a talent for describing the involvements, and feelings, and characters of ordinary life, which is to me the most wonderful I ever met with." A few months before he died, when conversing with Mrs. Davy at Naples, Sir Walter, alluding to Miss Austen, said: "I find myself every now and then with one of her books in my hand. There's a finishing-off in some of her scenes that is really above everybody else." Archbishop Whately spoke of her in the "Quarterly Review," in terms almost as high. Charlotte Brontë has criticized Miss Austen very differently; in one of her letters she says: "I had not seen 'Pride and Prejudice' till I read that sentence of yours, and then I got the book. And what did I find? An accurate daguerreotyped portrait of a commonplace face; a carefully fenced, highly cultivated garden, with neat borders and delicate flowers, but no glance of a bright, vivid physiognomy, no open country, no fresh air, no blue hill, no bonny beck. I should hardly like to live with her ladies and gentlemen in their elegant, but confined, houses." Again, referring to George Sand, she says: "She has a grasp of mind, which, if I cannot fully comprehend, I can very deeply respect; she is sagacious and profound.—Miss Austen is only shrewd and observant."—Miss Austen's novels have sold largely in the United States, and have been translated into French.

AUSTEN, or AUSTIN, WILLIAM, an English architect of the 15th century. He lived in the reign of Henry VI., and was commissioned to erect the tomb of Richard, earl of Warwick. This monument was 21 years in building, and cost £2,458 sterling.

AUSTERLITZ, a town of Moravia, in the circle of Brünn, 12 miles E. S. E. from Brünn, the capital of the district and circle. This little town owes its celebrity to the battle won by Napoleon, over the united Austrian and Russian armies, Dec. 2. 1806. On Nov. 18, of that year, Vienna, which had never yet yielded to an enemy, was entered by Gen. Sebastiani, with a brigade of dragoons, supported by Murat, Lannes, and Bertrand, at the head of a powerful force of grenadiers. By a stratagem conducted with intrepidity and coolness, which would have

been admirable, had it not been stained by more than a suspicion of a breach of faith, these generals made themselves masters of the bridge of Thabor, which had been lined with combustibles, trains laid and matches lighted, ready for instant conflagration, and thus placing themselves *a cheval* on the Danube, destroyed the effect of the masterly movements of Kutusoff, who was no longer protected in his rear by the Danube, but was forced to retreat, if retreat were possible, on the second Russian army, in the presence of an enemy 4 times superior to his own force. Delighted with the success of their stratagem of the bridge of Thabor, by means of a pretended armistice, Murat endeavored to play the same game, a second time, on the wily Russian; but he turned the game on the inventors, and by pretending to fall into the snare extricated his whole force, with the exception of a rear-guard of 8,000 men, under Bagration, whom he left to check the French, exposed to their whole power, while he with his army defied rapidly to the rear and gained the important post of Znaim, where he was joined by Bagration, bringing in 5,000 men, after fighting the whole French army, during a whole day and half a night, at Hollabrunn and Guntersdorf, where he left 3,000 dead on the field. The remainder of the month was consumed, by both parties, in almost unparalleled efforts to reinforce and concentrate their armies; and, at its close, the allied Austrian and Russian armies had effected their junction at Wischau, to the number of 104 battalions and 159 squadrons, presenting a grand total of 75,000 men. In addition to these, a division under the grand duke Constantine, and a strong corps under Benningen, were hourly expected, which would have raised the allied forces to 90,000 men, while it was known that Prussia was arming, and that in a few days the French communications would be menaced by the appearance of troops of that nation on the Danube. At this time, the French army was but little over 50,000 strong, and when Constantine's reinforcements had joined the allies, had they acted with vigor, Napoleon would have been in great danger. But their movements were slow and vacillating; Napoleon also was reinforced, so that his army amounted to 70,000 men, at the moment when the Austro-Russian army determined to attack him. In this emergency Napoleon evacuated the town of Austerlitz, and concentrated his whole force round Brünn, retiring his right wing, as if fearful of an attack in that quarter, in the hope of inducing the enemy to quit his commanding station, on the heights of Pratzen, in which case he felt certain of taking him at disadvantage. Accordingly, on Dec. 1, with the first dawn of morning, to his inexpressible delight, the great leader saw the enemy descending into the valley and moving deliberately in a flank march of 5 massive columns, across or around his whole position, in order to attack his left wing. The French army occupied a concentric semicircle

of heights, partially covered by wooded eminences, villages, and a chain of fish ponds, morasses, and little lakes. The left wing was commanded by Lannes, Bernadotte, and Oudinot, with the cavalry of Murat, and the imperial guard, under Bessières, in reserve. Soult held the centre, which was immensely strong; and Davoust, who had been brought up with great difficulty from Hungary, commanded the right, which was thrown back in a great semicircle to the lake of Mœnitz, and had his reserves at the abbey of Raygern in the rear. All day long Napoleon watched the enemy with an eagle eye, as by crowding the heights of Pratzen with their glittering masses they endeavored to conceal their general movements around his front, in order to attack his right wing in overwhelming force. But, when the sun set, he was assured that he had them in the hollow of his hand; and, as was his wont, he rode through his camp addressing his men with those words of fire, which none knew so well to utter, and dictated one of those magical proclamations, which, if they appear to us, when read in the closet, wordy and bombastic, stirred the souls of his soldiers, and rendered them invincible. During the night, which was the first anniversary of his coronation, the soldiery, wrought up to the highest possible pitch of excitement, celebrated the event by making huge bonfires of the straw of their bivouacs and the wood of their huts, and the hours of darkness were spent in tumults of joy, and amid the anticipations of certain victory. When the sun rose, bright and cloudless, that "sun of Austerlitz," which so often furnished Napoleon with a theme for his bold and sublime apostrophes, the ruin of the enemy was apparent to all eyes. The heights of Pratzen, the key of their position, were utterly deserted, and their huge and massy divisions were toiling in columns of march, around the whole front of the concentrated French semicircle, intent on turning the right wing of Napoleon, who had only to launch out masses in all directions, like radii from a common centre, in order to attack the enemy in flank, and at the utmost disadvantage, on all points simultaneously. It appeared as if no number, no severity of defeats, could teach the allies, that they were dealing with one in whose presence to make one false move was to be annihilated. The marshals saw the advantage, and besought the emperor to give the signal for action without delay. But his keener eye, while it saw all that they saw, perceived that the decisive moment was not yet. The half-committed blunder might possibly have been retrieved, and he waited. "When the enemy is making a false movement, gentlemen, we must take care not to interrupt him. We will wait 20 minutes." Before that time had elapsed, the faulty movement was complete; the roar of the Russian guns was heard from the extreme French left; and an aide-de-camp galloped up, with tidings that Davoust was hard pressed in the village of Sokolnitz. "Now

is the time," said Napoleon, ordering his marshals to their posts, and to commence the attack on all points; while, mounting his horse, he exclaimed, "Soldiers, the enemy has imprudently exposed himself to your blows, we shall finish the war with a clap of thunder!" And so it was. Soult's centre instantly forced, carried, and held the heights of Pratzen, in spite of the most desperate efforts of Kolowrat and Kutusoff to retake it. Bernadotte and Lannes, simultaneously, fell on the Russian right, taking it utterly by surprise; and, although the Austrian cuirassiers in that quarter, and the Russian cuirassiers of the imperial guard, led by Constantine in person, in the centre, made a desperate effort to retrieve the day, and, for awhile, were successful, so soon as the French reserves of the imperial guard came up, under Rapp and Bessières, all was over. The centre was pierced through, and driven completely off the field, in confusion. The carnage and disorder were hideous; and, to increase both, the icy surface of the frozen morasses and lakes, across which the fugitives were attempting to escape, broke, partly from the weight of the artillery and the pressure of the columns, partly from the effect of the French shells bursting under it; and above 2,000 men perished in the waters. Meantime, with characteristic obstinacy, Davoust, though sore pressed on the French right, had held out, until, the Russian centre and right being annihilated, or pushed off the field, Napoleon directed Soult, from the victorious centre, and all the reserves of the imperial guard, to wheel upon the rear of the Russian left, which had been thus far successful. It was a portion of this force which, while endeavoring to reopen its communication with its own centre, perished in the frozen lakes, as just related. The ruin of the whole army was now complete; and the last stroke was the breaking of Murat's cavalry, and the infantry of Suchet, into the retreating masses of this last force, dialodging it from the road to Olmutz, and capturing all its artillery and baggage. The loss of the allies was immense; above 10,000 men were left on the field; above 20,000 were prisoners; 185 guns, 400 caissons, and 45 standards were the trophies of the battle. Its fruits were the close of the campaign; the peace of Presburg; the subjugation, for the moment, of all northern Europe; and the death of William Pitt, who died, almost broken-hearted, at the apparent failure of all his efforts. Austerlitz is justly considered as one of Napoleon's greatest victories, and the strongest proof of his surpassing military genius; for although the errors of the allies were doubtless its primary cause, the *coup d'œil* which detected the blunder, the patience which abided its time for the completion, the decision which struck the crushing blow, and the lightning swiftness which consummated the ruin, were beyond praise, almost beyond admiration. Austerlitz was a miracle of strategy, and will not be forgotten until wars have ceased to be.

AUSTIN, a county of Texas; area, 950 square miles. It is traversed by the Brazos river, which is navigable by steamboats during high water. The soil is fertile, except in the S. E., where it is poor and sandy. Capital, Belleville. In 1850 the productions were 120 bushels of wheat, 1,474 of rye and oats, 149,280 of Indian corn, 40,852 of potatoes, 355 tons of hay, and 98,412 pounds of butter. Pop. 6,599, of whom 4,805 are free and 2,294 slaves.

AUSTIN, the capital of Texas, seat of the courts of Travis county, on the north side of the Colorado river, 280 miles W. N. W. of Galveston, with which it is connected by the Colorado, navigable in the winter by steamboats. The environs of Austin are highly picturesque. It contains the state and county buildings, and 8 newspaper offices. Here the supreme court is held annually. The seat of government was fixed at Austin in the year 1844. Pop. 8,000.

AUSTIN, JONATHAN LORING, secretary and treasurer of Massachusetts, born in Boston, Jan. 2, 1748, died May 10, 1826. He graduated in 1766, was a merchant and secretary of the board of war in Massachusetts. In 1777, on occasion of being sent to Paris to the American commissioners with the news of Burgoyne's capture, he put up a note in Dr. Chauncy's church for a prayer for a safe voyage. The doctor, full of the spirit of patriotism, prayed that, whatever might become of the young man, the packet might arrive safe. He remained 2 years in Paris as Dr. Franklin's secretary. He also spent 2 years in England as agent of Dr. Franklin, residing in the family of Lord Shelburne. On his return in May, 1779, he was liberally rewarded by congress. In 1780, in his passage to Spain as agent of the state, he was taken and carried to England. He afterward held the offices of state secretary and treasurer in Massachusetts, and died universally respected.

JAMES TRESCOTIC, son of the preceding, former attorney-general of Massachusetts, born at Boston, Jan. 7, 1784, graduated at Harvard college in 1802, and soon after commenced the practice of the law. In 1806 he married a daughter of Elbridge Gerry, afterward vice-president of the United States. He rose in the profession, and was attorney-general of the state from 1822 to 1843. Beside numerous contributions to the *Christian Examiner*, and political journals in Boston, he has published several orations and other similar literary productions, and a biography of Elbridge Gerry, presenting a picture of the life of the revolutionary worthies.

AUSTIN, MOSES, a south-western pioneer, who obtained the first grant from the Mexican government for the formation of an American colony in Texas, was a native of Durham, Connecticut. He led an adventurous life, engaged in lead-mining in Virginia and Missouri, through a part of Louisiana, where he commenced operations about 1800. He entered Texas, and reached Bexar in 1820. There he made out, and had approved by the local authorities and forwarded

to the commandant-general at Monterey, an application for permission to colonize 800 families in some part of Texas. Unable to remain for an answer, he set out on his return to the Sabine in January, 1821. Robbed and deserted in that unsettled waste, he contracted a severe cold in making his way to the inhabited parts of Louisiana, of which he died on the 10th June following. The application he had sent on was successful, and the enterprise prosecuted by his son, Stephen F. Austin, in the foundation of the town of Austin, now the capital of the state of Texas.

AUSTIN, SAMUEL, D. D., president of the university of Vermont, was born at New Haven, Ct., Oct. 7, 1760, and died at Glastenbury, Ct., Dec. 4, 1880. He graduated at Yale college in 1788, with the highest honors, and after studying divinity 2 years, was ordained as pastor of the church in Fairhaven, Ct. In 1790 he became the minister of the first Congregational society in Worcester, and performed the duties of this station for 25 years, enjoying the warm esteem of his parishioners, and a high reputation as a preacher. In 1815 he accepted the presidency of the university of Vermont, and held that office for 6 years. He then removed to Newport, R. I., and took charge of a small congregation there, but at the end of 4 years his health failed, and he returned to Worcester. During the last 8 years of his life his reason was clouded, and during a great part of the time he was plunged in a profound melancholy, amounting at times to an ecstasy of despair. The most important of his works are a "View of the Church," and his "Theological Essays." He also published "Letters on Baptism," examining Merrill's seven sermons, a reply to Merrill's twelve letters, and a number of sermons.

AUSTIN, SARAH, an English authoress, belonging to the celebrated Taylor family of Norwich, and wife of John Austin, a barrister of London, born about the commencement of the present century. The rank which has been won by Mrs. Somerville in the hierarchy of English science, by Mrs. Gaskell and Miss Charlotte Brontë among English novelists, and by Mrs. Browning among English poets, fairly belongs to Mrs. Sarah Austin as the representative of the female intellect of England in an important but ill-cultivated field of literature. With the exception of William Taylor, of Norwich, and Thomas Carlyle, no English writer has done such good service as Mrs. Austin in introducing the finest types of the German mind to the knowledge and the appreciation of English readers. As a critic, Mrs. Austin has not, perhaps, been so conspicuously successful as some of her coadjutors, but as a translator she has been altogether unrivalled in her own age and country. Her first and most remarkable achievement in this kind was her version of the travels of Prince Pückler Muskau, published under the title of "The Travels of a German Prince in England." Al-

though the person of the prince was familiar to many members of the society of London, and his name to all the polished world of Europe, still the idiomatic painting and fluent ease of the English translation were so admirable that for a long time it was difficult to persuade many cultivated persons, and not a few critics, that the work was not the composition of some English author, after the manner of those "Letters of Esprilla," which won for Mr. Southey so much reputation in the beginning of the century. The first work which Mrs. Austin gave to the world under her own name was a publication in 3 volumes, which appeared in 1833, and was entitled "Characteristics of Goethe." This book won an immediate and lasting success, which it well deserved, not only for the excellence of the versions which it contained, but for the quiet and courageous earnestness with which the author assumed less the indication than the assertion of the worth and power of Goethe, at a time when Germany and Germanism were still the terror of the standard authorities in English literature. Mrs. Austin has since published a translation of Ranke's "History of the Popes," a "Collection of Fragments from the German Prose Writers," composed upon the suit of a friendly critic in the "Edinburgh Review," an excellent treatise on "Education," which has become an authority on the specific themes with which it deals, "Sketches of Germany from 1760 to 1814," and a new edition of the "Story without an End." As a singularly industrious, refined, thoughtful, and accurate writer, directing all her energies to the positive improvement of the taste and elevation of the æsthetic criterions of her country, Mrs. Austin has done for England hardly less than was done by Madame de Staël for France and Europe, and though her fame can never rival that of the versatile daughter of Necker, her influence will long continue to be felt in English literature and life, and always for good.

AUSTIN, STEPHEN F., founder of the first American colony in Texas, and son of Moses Austin, died Dec. 27, 1836. Setting out from Natchitoches, July 5, 1821, to follow up the grant, authorizing the formation of a colony, previously issued to his father, he went to the city of Mexico, where it was specially confirmed Feb. 18, 1823. By it he was clothed with almost absolute power over the colonists, and only obliged to report to the captain-general. The colony, since become Austin, the capital of Texas, of which he selected the site after a careful reconnoitring of the country, had been previously organized by him upon the basis of giving to each man 640 acres of land, 320 for a wife, 160 for each child, and 80 acres for each slave—and the immigrants being made up in great part of young unmarried men, he induced them to unite in pairs, making one of them the head of the family thus constituted, and increasing the number of families, which singular arrangement is said to have resulted to the sat-

isfaction of all concerned. Their great trouble was with the Indians, who, in large bands of different tribes, roamed over the fertile plains, armed with bows of the length of a man, and so strong that few Americans could string them, and whose arrows flew with an unerring speed, which made them a match for the rifles of the settlers. Nevertheless, the colony prospered, and, being accompanied by a considerable number of similar associations, promoted an influx of Americans to such an extent that they met March 1, 1833, without the concurrence of the Mexican population, in a convention to form a constitution for the as yet Mexican state of Texas. Austin was one of the delegates chosen to carry the result of their deliberations to the central government at Mexico, and obtain its ratification. The delays and frequent revolutions at Mexico leading him to despair of ever bringing his commission to a close, he addressed a letter, Oct. 2, 1833, to the municipality of Bexar, and through them to the people of Texas, recommending a union of all the municipalities to provide against the consequences of a probable refusal of their applications by organizing a state under the *Acta constitutiva* of May 7, 1824. This letter was immediately transmitted from Bexar to the supreme government, by whom, its contents not failing to be considered treasonable, an express was despatched after Austin, and he was arrested on his way from Saltillo, taken back to Mexico, and thrown into prison. Here he remained for 3 months, deprived even of the light of day, until released by Santa Anna, who had meantime arrived at the head of affairs, and who continued to hold him as a sort of hostage for the good behavior of Texas. The commission with which he was charged was brought before a select council, Santa Anna presiding; and although the decision was against the separation of Texas from Coahuila and the formation of a new state, he wrote a letter, Dec. 2, 1834, to the people of Texas, expressing confidence in the policy of Santa Anna, and recommending quiet and harmony with Mexico. There he was detained until Sept. 1835, and on his return was welcomed by all parties. Finding the condition of the country so different from what he had been led to suppose, confusion and insecurity having swallowed up all the functions of government, he immediately took part with the revolutionary party, which had been forming in his absence, and, after the first affair at Gonzales, Oct. 2, was put in command of their little army, and undertook at once the work of driving the Mexicans out of Texas. His first act was to send into eastern Texas for Gen. Houston and the Redlanders, his second to invite the consultation of San Felipe, the only existing emblem of civil government among the settlers, to take up their quarters with the army. On Houston's arrival, Austin offered to resign the command in his favor, as being more accustomed to military pursuits, which the former entirely declined. He was, however, soon

elected to that post, in Nov. 1835, and Austin appointed a commissioner to the United States. This was before the Texan declaration of independence; and it was not till after his arrival at New Orleans, and the information of the union of Santa Anna with the federal party for the invasion of Texas, that he was brought to the point of recommending such a measure. In this country he acted with prudence and patience, and was very successful in preparing the public mind and improving its disposition for the independence and annexation of the new republic. On his first coming he issued an address at Louisville, which set forth attractively the claims of Texas, and in a wide circulation could not fail to produce a feeling of sympathy among a people of the same blood. He even writes from New Orleans, on his return from Washington, June 16, 1836, that but for the want of official documents upon which to make a formal demand, he might even then have obtained the official recognition of her independence. He reached Texas in July, and while still engaged in zealous negotiations to that end, was removed by death in December. He died amid universal esteem and recognition of his patriotic services. All honors were paid his remains, and he is looked upon as one of the most eminent and honorable of the founders of Texan prosperity. A biography of Austin is said to be in preparation by Gen. M. B. Lamar. (See Yokum's "History of Texas," New York, 1856.)

AUSTRALASIA, one of the 3 geographical divisions of Oceanica, lying S. and S. E. from Asia, extending from the equator to lat. 47° S., and from long. 111° to 188° E., and comprising the islands and archipelagos embraced within those boundaries, of which the large continental island of Australia is the nucleus. The name was formerly given indefinitely to all the lands lying S. of the Asiatic continent. The land area of the islands belonging to Australasia proper is about 3,500,000 sq. miles, and the population, including the aboriginal tribes, may be estimated at 2,500,000.

AUSTRALIA, or NEW HOLLAND, a vast island in the southern ocean. In size it approaches the proportion of a continent, comprising an estimated area of 3,000,000 sq. miles, or only one-sixth less than that of Europe. Its coast line embraces a circuit of 8,000 miles. It extends from lat. 10° 48' S. to 89° S., and from long. 113° E. to 153° E. The Australian group was formerly included by most geographers in the equatorial archipelago, of which Australia, or New Holland, was considered the largest island. Although the contiguity of Cape York, the extreme northern point of Australia, to the opposite coast of Papua, as well as the ethnography of the races inhabiting the two islands, would point to a common aboriginal stock, there seems no satisfactory reason for extending the geographical limits of the group beyond New Guinea and the small islands to the east. The western islands of the Indian archipelago are inhabited by men of the

Malay type, and the fauna is essentially distinct in the 2 regions, marsupials being the marked characteristic of the Australian group, whose appearance in the adjacent islands of the archipelago is altogether exceptional; while, on the other hand, the animals which abound in the western part of the Indian archipelago are wholly wanting in Australia. Not less marked is the distinction between the flora of the 2 geographical divisions, except that in the northern part of Australia, situated in the tropics, some seeds and plants which have been borne by the winds and currents from other shores have taken root and form part of the vegetable productions of the region.—The geography of Australia is still almost unknown, notwithstanding the attention which the great island has received during the last few years. The line of coast was surveyed and its indentations mapped out by Flinders and other commanders, in the early part of this century. The general features of the southern and south-eastern regions to a distance of some 300 or 400 miles from the coast have been ascertained, but the northern coast has been little explored. North-eastern and western Australia are somewhat better known; but the great central regions are at present a blank in our maps, their character being the subject merely of speculative approximation. Sir Thomas Mitchell penetrated as far as long. 140°. The lamented Leichardt traversed the interior from Moreton bay on the E. to Port Essington in the N., but his murder by the blacks disappointed the great hopes which had been formed for his projected journey from Sydney to Swan river, directly through the *terra incognita*. The opinions of Stuart, Oxley, Mitchell, and others, who have made any progress toward the exploration of central Australia are, that it consists of a succession of vast arid plains, giving rise to the hot winds which blow from that direction in the summer, and of a succession of immense swamps when flooded by the winter rains, for whose outlet there are no water-courses. This opinion is founded on the character of that part of the country which they had traversed. But the light thrown upon the unknown African interior by the accounts of recent travellers and explorers, and the dissipation of numerous unfounded conjectures, teach us to look very doubtfully on the theories respecting central Australia, based as they are on very slender materials. The knowledge we already possess, acquired within certain limits of the seaboard, certainly justifies an opinion as to the peculiar uniformity which distinguishes Australia. A glance at the map shows uniformity in the unbroken coast line. The great gulf of Carpentaria in the north; King sound, Hamelin bay, and Freycinet harbor on the west; Spencer and St. Vincent gulfs and Port Philip bay, on the south, are the only important indentations. The aborigines are of one type—black, with long, wavy hair, perfectly distinct from the negro. The same want of variety marks the animal and vegetable world. The

same classes and genera that are found at Sydney, on the east coast, are found 2,800 miles off, at Swan river, on the west, the only change being in the number of the individuals.—The Australian mountain ranges extend throughout New South Wales, Victoria, and south Australia. Not only are there continuous ranges, but the country is covered with lofty bluffs and bold masses, probably forming parts of one chain, though cropping out at very wide intervals. The ranges commence at Wilson's promontory, the extreme south-eastern corner of the continent, at which point they make an angle whose sides run due N. and W. The distance of the range running N. from the sea varies from 50 to 150 miles. The ranges are called the Blue mountains, the Liverpool range, and the Woolongong mountains, or Australian Alps. Some of the highest of the Australian Alps, as well as others in the Liverpool range, attain the height of 6,500 feet. In the northern part of the colony of Victoria the ranges run E. and W., and are known by a variety of local names. The Stanley ranges divide south Australia from Victoria. Gipps's land, the south-eastern part of Victoria, is a mountainous district, harboring great droves of wild cattle, and unexplored except by an occasional stockman. The peculiar circumstances into which the colonies have been thrown of late years have checked the progress of inquiry into their general geography, although particular localities have been explored.—Count Strzelecki, one of the most accomplished and indefatigable of modern scientific travellers, has given an elaborate account of the results of a 5 years' exploration of New South Wales and Van Diemen's Land. From his admirable work we abridge the following account of the mountain ranges of New South Wales: "From the eastern side the shore line is generally composed of an undulating country, richly wooded, and gradually rises westward until it spreads into a centre ground of verdant, round-topped hills and ridges; beyond these is high land broken by peaks. In lat. 80° (the western part of New South Wales) a granitic chain divides the sources of the rivers Peel and Hastings. Further south one of its eastern spurs of porphyry divides the Manning from the Hunter. This part of the chain is called Liverpool ranges, and is crowned by several peaks of greenstone, whose naked tops rise to 4,700 feet. Of these Mt. Oxley and Mt. McArthur are the chief. Westward of these the chain turns suddenly to the S. E., and a little after S. W. At Cullenbullen the chain is granitic and throws off a remarkable basaltic spur to the eastward, the ramifications of which render all that sandstone locality commonly called Blue mountains difficult of exploration. The mountains here attain an altitude of from 2,400 to 4,050 feet, and between the ranges are yawning chasms, deep winding gorges, and frightful precipices. These stupendous rents are enclosed between gigantic walls of a sandstone rock. Everywhere the descent into the deep recess is

full of danger, and the issue almost impracticable. From the Blue mountains proceeding S. W., the chain is composed of sienite and granite.—We now come on the Honeysuckle ranges, the mean elevation of whose greenstone crest is 4,050 feet. Twenty-five miles beyond, it attains an elevation of 4,500 feet, and its character alters. The richly wooded greenstone tops are exchanged for barren, fantastic peaks of sienite. A spur of basalt shoots off in a northward direction for 120 miles, and separates the Macquarie from the Abercromby. The chain itself now assumes in the S. W. bend a more rounded and wooded aspect, which at the head of Lake George again alters. Here a westerly spur of serpentine and porphyries divides the tributaries of the Murrumbidgee from those of the Lachlan. Further on, beyond Lake Bathurst, another spur branches off to the north-east and stretches over Camden and Cumberland, exhibiting the most picturesque and the most savage scenes. Sixty miles further south the chain becomes bolder. Its greenstone and sienitic crest assumes the appearance of Alpine table-land, at times rises and breaks into sharp-edged summits, capped here and there by snow in the midst of summer. The surveyor now advances to the Australian Alps, the spurs on either side of the main ridge preparing him by their precipitate and intricate character for the country he is about to traverse. Mt. Kosciusko, the chief peak of this range, is 6,500 feet high, and the view from its summit is one of the most magnificent in the world. On the westward side is the gorge, almost perpendicular from the verge of the cone, and 3,000 feet deep, with the sources of the Murray, whose waters flow through beautiful valleys, displaying scenery to be compared only with that seen among the European Alps. From Mt. Kosciusko the chain still trends south-west, and maintains the same bold character, though of diminished height. The general character of the whole region hence to westward is narrow, almost impassable, gullies and thick underbrush. Eastward is a fine country of beautiful slopes and valleys, richly watered, and presenting fine sites for farms and country residences. From Mt. Gisborne the eye takes in Gipps's land like an amphitheatre walled in by lofty and picturesque mountain scenery on the N. E. to S. W., and on the S. E. open to the sea. Proceeding S. we arrive at Wilson's promontory, where the continental range encounters the sea, rising in a chain of rocks and islands from the ocean as it crosses to the opposite coast of Van Diemen's Land. The most prominent and striking features of this outline consist in the mineral masses which form the dividing range, composed of granite, sienite, hyalomictite, protogine, quartz-rock, petiosilex, porphyry, serpentinous hornblende, and augitic rocks; partly in the character of the sedimentary rocks of silicious, calcareous, argillaceous, aluminous, and bituminous character, which are confined to the eastern and western talus of that range, resting on it either in a ver-

tical, inclined, or horizontal position. Its main phenomena are referable to epochs of terrestrial revolutions; some relating to periods marked by a partial quiescence and the deposition of sedimentary rocks; some to perceptible changes in the condition of the organic life inhabiting the sea; some others, again, to catastrophes which swept from the surface of the earth all its animal and vegetable kingdom."—There is a general deficiency of surface water in Australia. It is commonly said that the rivers are all ponds, and the lakes all swamps, and the saying is not without reason. In the summer, from long droughts, and from the great evaporation under a sun which often exceeds 180° F., the lakes, formed only by the winter rains, dry up, and the traveller is surprised on being informed that an expanse of thick black mud or rank herbage is a lake. The small rivers disappear in like manner, forming a long chain of ponds and water holes varying in depth with the aridity of the season. The larger rivers are liable to a great diminution of volume from the same cause, and the consequent absence of tributary streams. A river of respectable size issues full grown from the hills, and after a course of many miles, ends in a dead level, where its course ceases. The Lachlan, Darling, Murrumbidgee in New South Wales, the Murray, which runs from N. S. Wales to Adelaide, the Glenelg, Goulburn, Yarra-Yarra, and Plenty, in Victoria, are permanent streams. The Murray, taking its rise in the Australian Alps, in the S. E. corner of Australia, runs its course of 1,000 miles and enters the sea near Adelaide by a very narrow mouth, the entrance to which is impeded by a bar. In 1839, Capt. Sturt boated the greater part of the Murray, but its extent and capabilities were unknown until by the individual enterprise of Capt. Cadell a small steam vessel was got over the bar at Adelaide, in which he proceeded up the river and demonstrated that a noble stream of 1,000 miles, and navigable for nearly its whole length, ran through the finest districts of the continent from the interior to the sea. The Darling, with its numerous tributaries, rising in the ranges of the Moreton Bay district, the Murrumbidgee, and its affluent, the Lachlan, all swell the stream of the Murray.—The geological structure of Australia has been hitherto but imperfectly determined. Inquiries on all topics of scientific interest, save those which bore on the question of gold, were for a time suspended; notwithstanding the presence on the spot of many men of well-known fitness and capacity to investigate and determine all such subjects. The comparatively recent geological formation of Australia is, however, generally accepted. The analogy between its stratification and that of the old world is uncertain. We meet with granite, old red sandstone, limestone, and coal, but the relations of these several formations are as yet unascertained. Recent igneous action on the surface is apparent, and the immense boulders of rusty iron stone honey-combed with

small holes, and scattered all over the continent from the sea-beach to the far interior, present a singular feature. Granite, limestone, and sandstones, are found everywhere. An excessively hard blue stone is quarried near Melbourne, splitting off in irregular fragments like flint, and bearing all the marks of surface igneous action.—The climate throughout Australia is generally favorable to European constitutions. In its dryness it most nearly resembles that of Spain. It is liable to severe droughts, and to extraordinary transitions of temperature. Falls in the mercury of 20°, to 80° F., and sometimes 40°, in half an hour, are common on the coast, especially in the summer; and comparing the reading of the thermometer in the sun at noon, with the same at midnight, a variation of 99° in the 12 hours has been observed. The temperature of a thermometer in the shade which gives a range of from 50° to 95°, affords a very inadequate idea of the heat, and of its effect upon Europeans. The heat is often equal to that of a vertical sun, 120° being no uncommon height of the thermometer; a traveller (William Howitt) has even stated his experience at 189°. This is in the settled country. Leichardt speaks of 120° in the shade in the interior. The causes of these sudden changes may be found in the change of the wind. The north winds coming from the interior, and bearing on their breath the fiery heat of the burnt up central plains, bring down to the coast the exhausting influences of a simoom; and when the sea-breeze sets in loaded with moisture, the fall in the thermometer is almost instantaneous. It has been observed that the great heats of Australia do not produce the enfeebling effects on the constitution which are observed elsewhere, in equally warm countries. This may be doubted, for the frame of native born residents attains maturity at an age early in proportion to the climate, and aged persons are certainly rare. It must be admitted, however, that there are numerous causes independent of climate in operation at present which are unfavorable to longevity and health. There are no epidemic diseases, for, although diarrhoea in an aggravated shape is a very common malady, we are not aware that the native-born are particularly liable to it.—The aborigines of Australia are of a distinct race from that inhabiting the Indian archipelago. They are found only in the Australian islands, in New Guinea, the New Hebrides, New Caledonia, and the Solomon Islands. The New Zealanders are a distinct race akin to the inhabitants of Polynesia. The Australians are black, with some slight variety of shade from brown black to jet. They have curly hair, but not the crisp wool of the negro. Their faces are well developed, broad at the base, their lips less protruding than those of the negro; their bodies are deficient in muscularity and strength, but capable of great endurance. They have usually been stigmatized as the ugliest and most debased of earth's inhabitants. This is, however, an ex-

aggration. They are certainly superior in native intelligence to the Terra del Fuegians, and they comprehend and adopt European habits with ready ease. The early voyagers, however, describe them as ignorant of the use of fire, and as not building huts. They have a wonderful aptitude in climbing trees, taking hold with their large toes, which by practice and use are remarkably prehensile of inequalities in the bark; sometimes even they cut notches as they ascend. They do not on a march make huts, but content themselves with a strip of bark or a large bough as a shelter from the wind. Whether they knew the use of fire is less certain; they now kindle fires by rubbing two dry sticks together, an art common among savage tribes, and not likely to have been communicated by civilized men. But they frequently eat their food raw even now; and their cooking is performed by making a hole in the ground, lighting a fire in it, and putting in the slain animal, covering it with earth until the fire is out, when it is considered sufficiently cooked. In their native wilds they go entirely naked; in the vicinity of settlements they wear sheepskins, or the blankets, and clothing distributed to them by the settlers. They have not the use of the bow, an invention indicating some degree of refinement; but to compensate for this, they are extraordinarily expert in the use of the spear, which they fling 70 or 80 yards with the greatest nicety, and in throwing which they make use of an extra piece of wood to give increased leverage. They use the club or waddy; and they have the boomerang, a peculiar missile, resembling a double-edged wooden sword, bent to an ellipse; on being thrown into the air it strikes the ground at a distance and rebounds toward the thrower. The use of so novel a projectile which in the hand of an inexperienced person, is only hurtful to himself, argues some degree of the perceptive and reasoning faculties. These people are inclined to cannibalism, not like the Feejeans as matter of food, but as a result of war. The several tribes are engaged in frequent feuds with each other, principally in reference to their women. Their matrimonial usages are peculiar. The women are few in number; and the seniors or head-warriors of the tribe practise polygamy, which increases the difficulty the younger men experience in mating themselves to their liking. Generally a candidate for matrimony obtains a wife from his neighbors. Meeting a damsel to his taste, he knocks her down with his waddy and carries her off to his home. The husband tracks the ravisher, and a quarrel is the result. Their battles are comparatively bloodless; they take astonishingly hard knocks on their heads without permanent harm. A single combat is fought by exchanging blows on the head, until the combatant who fells his antagonist, remains the champion of the field. They are not usually courageous in the presence of the whites, but in the early times of the colony they frequently ex-

hibited great pertinacity in their attacks on out-stations. Their temper, though pacific and friendly, is not invariably so. Some of the tribes beyond the Murray are reputed to be treacherous and bloodthirsty. Their numbers are very limited; 80,000 is the highest figure that has been named, and even this is probably very much over the present mark. Rum has made great ravages among them. They are subject to cutaneous diseases, attributable to their extremely filthy habits. Their religious opinions are simple; they believe in a good and a bad spirit. They must have some normal ideas of a soul, inasmuch as since the white occupation of the country, they believe that white men are the reanimated souls of blacks. Many endeavors have been made, and not unsuccessfully, to bring them to a knowledge of the Gospel. Mr. Threlkeld, a resident of New South Wales, has been particularly assiduous in this matter; he has compiled a dictionary of their language, and has even translated the gospel of St. Luke into it. All the colonial governments keep up native schools. In New South Wales a black police was formed, whose services were very valuable in tracking depredators, from their native skill in following a trail. In Van Diemen's Land, where the natives were of a fiercer and more untamable disposition than on the main, a war of extermination was long carried on against them by the settlers, until the government at length took the matter in hand, and instituted an asylum in an island in Bass's Straits, to which the blacks, notwithstanding their wretchedness, were with much difficulty induced to go. The number has, even under the influence of kind treatment, gradually diminished, until of all the aborigines of Van Diemen's Land, there are not 50 left. Some few of the blacks are occasionally employed as stockmen or shepherds; but they are, like all savages, averse to regular labor of any kind, and the uncertainty of their services prevents their general employment.—The animal life of Australia varies widely from that of the rest of the world, and gives a special character to its zoology. The fierce carnivora and mighty graminivorous animals, which have for ages peopled the forests and deserts of the old world, are unknown to the tenantless plains and dense bush of Australia, although a fossil elephant has been discovered by geologists. The carnivora are few in number and fewer in species; the chief predatory animal being the dingo or native dog. The domestic character of this animal among all nations would account for its presence among the aborigines, who in those transits from New Guinea by which in all probability the great island was first peopled, were accompanied by their faithful attendants. The dingoes are a very inferior breed of the canine archetype, the shepherd's dog; their bushy tails and pricked ears give them a resemblance to a cross between the fox or wolf, and they hunt in packs, making night hideous with their yells, and are almost the only living enemy with which the shepherd

has to contend. The trouble they give is less in the murders they commit than in the panics they cause among the woolly people. A flock of 2,000 or 3,000 sheep will, on the alarm of dingoes, make a rush, as it is locally termed, and in the confusion the weaklings will be trampled down and smothered, while the main body spread themselves over miles of country, giving the flock-masters and their shepherds prodigious trouble to get them together again. The dingo occasionally furnishes sport to a "scratch" pack of hounds and a few keen sportsmen; but he is fast disappearing from the settled country; poisoned bait, plentifully distributed, clears the sheep-runs of these unwelcome visitors. The other Australian carnivora are marine animals. The great zoological families, the ruminants and pachydermata, are wanting to Australia, while the graminivorous mammals are represented by a peculiar class met with but rarely elsewhere in the world, the marsupialia, animals with pouches, the class to which the American opossum belongs. In Australia and Van Diemen's Land there are more than 100 distinct species of marsupials. They all possess the same general characteristics, but differ in size, organization, and habits of life. The kangaroo *macropus* is the largest of all. They are distinguished by short fore legs, and immensely long hind legs. This disproportion causes a singular mode of progression, consisting of a series of leaps on the hinder legs. When feeding, they rest on the fore legs, but when moving rapidly they make great jumps, and when pressed in the chase they exhibit an astonishing speed, outstripping the fleet and powerful dogs with which they are hunted, their stride rivaling that of the race-horse. The hind legs, armed with 3 long claws, are formidable weapons of defence, and on coming to close quarters, a stroke of the claw will rip up an assailant as effectually as a boar's tusk. This is so well known even to the dogs, that an old kangaroo dog, although of great power and courage, will not hastily rush in upon his antagonist at bay, but watches his opportunity or waits assistance before seizing him. All the kangaroos feed together and graze on the plains, or feed on the under shoots of the young trees—their flesh is wholesome, and resembles venison. The tail, which is both long and thick, makes a support in which both natives and settlers have great faith. The rock kangaroo delights in rocky places. The wallaby is the small kangaroo of the plains. The opossums (*phalangers*), another species, live in trees, and are remarkable for the ease with which, like some of the monkey tribes, they hang to the branches by their tails and swing themselves from one branch or tree to another. Another class of the same species are the flying opossums (*pterus*), the peculiarity of whose conformation is a membrane extending from the hind to the fore legs, which gives them the power of supporting themselves in the air, and helps them to take wide leaps from tree to

tree. The hairy tails (*dasyurus*), sometimes called native devils, and frequently wild cats, are found in the woods. They are carnivorous marsupials. They resemble pole cats, traversing the trees in search of young birds, eggs, and smaller animals. The thylacynus is a predatory animal, about the size of a dog, but resembling a large weasel in figure. It is nocturnal, feeds on small animals, and has an affection for young lambs and poultry. There are five species of rodentia, resembling the rats and mice of other countries. One, the hydromys, somewhat resembles the beaver in its size and aquatic habits. The most anomalous of all the animals known in Australia is the ornithorhynchus or duck-billed animal, and the echidna. The echidna is covered with short spines or quills like a hedge-hog, is a burrowing and hibernical animal, living on ants and ants' eggs. The ornithorhynchus is a viviparous quadruped. It is aquatic, living at the bottom of pools, on roots and water insects, and endowed with a head and mouth resembling that of a duck, which enables it to retain its bits of food and to reject the mud and gravel with which they are intermixed. Australia furnishes copious subjects for the consideration of the ornithologist. Hawks, eagles, and owls are numerous, and in some parts almost extirpate the smaller birds, and do great injury to young lambs and even to foals and calves. The parrots and parakeets abound everywhere, and their plumage is remarkable for its brilliancy. Doves and pigeons are numerous. Waterfowl, wild ducks, geese, and swans, and the double-snipe, are found in countless myriads in the swamps of the interior and along the sea-shore. Quails also are very numerous, but the gallinaceous birds are wholly deficient. The emu, a large bird of the ostrich kind, the pelican, the cereopsis goose, the straw-necked ibis, the bower bird, the bird of paradise, and a magpie or crow, are among the more remarkable birds. The reptiles are not very numerous, and few are noxious. The diamond and whip snakes are poisonous, and the bite of the large black snake is dangerous, but whether from the heat and irritation or from venom is uncertain. Of the insects, a large spider, called the tarantula by the colonists, is decidedly poisonous, a red spider is also poisonous; the scorpions and centipedes are also poisonous, and the ants, if not poisonous, bite very severely. Flies are so numerous as to be a perfect plague; the sand fly is particularly obnoxious and even dangerous in the case of wounds or mere bruises either on man or beast, on which it settles instantly, and deposits its eggs, which in a few hours produce grubs. There are several species of ants, some of which are of great size (an inch long), and bite severely. Among them the soldier ant and bull-dog ant are conspicuous for size, strength, and ferocity. There are also various kinds of beetles. Insects, especially a large white grub, form a choice article of food with the natives, of whom it may be gene-

rally said that they are by no means hypercritical in the quality of their food.—The indigenous vegetation of Australia is altogether peculiar to itself. The eucalypti and acacias are the universal forms of vegetable life. Some naturalists, indeed, profess to have remarked trees of similar type in deltas and other recently formed alluvial deposits, which would seem to add a link to the chain of deductions by which the comparatively recent formation of the Australian continent is shown. The eucalypti gum trees, so called from their copious resinous exudations, are of three varieties: the white, blue, and red gum. The wood is very close and hard, the foliage of a dull green, dense, and gloomy. They attain an enormous size, 200 feet is a common length, and their girth varies from 20 to 40 feet, while in some primeval forests, even 80 feet has been attained. They are spread all over the south of Australia and Van Diemen's Land. The acacias or wattle trees are another numerous and wide-spread class. They are of all sizes, from a small plant to a large tree, with and without flowers. The *acacia fragrans* is delightfully odoriferous, while the golden wattle adds beauty to the sylvan scene. They are a hardy race with tough stems, and seem to thrive best in sandy soils, springing up with especial vigor after the ground has been cleared of large timber by the bush-fires. The cedar tree which furnishes useful timber of large dimensions, the shioc or she oak, and the stringy bark, are all Australian denizens, the latter being found chiefly in the barren mountain ranges. In New South Wales the graceful forms of the cabbage palms meet the eye at every side; the terrible nettle tree is a Brobdignagian nettle, the intensity of whose poison is so virulent that the man or horse that runs against it is struck as if by paralysis, and death rapidly ensues. Happily the *arum* is close at hand, and the wounded part being rubbed with its beneficent juices, the fatal consequences of the nettle stings are obviated. The native grass tree furnishes to the cattle in droughts a substitute for their ordinary food. Many of the forest trees of Australia shed their bark while the leaves are perennial. From lack of moisture, however, the latter become of a leathery texture, and both sides alike. Beside the above, we have arborescent ferns which attain the perfection of trees, putting forth branches eight to twelve feet long; the giant lily (*doryanthemum*) an object of great beauty; the tea tree (*leptospermum grandiflorum*); and the remarkable stench plant (*hydrocotyle densiflora*), which, as its name imports, gives out an odor like the most offensive night soil. The indigenous fruits and edible roots are very few in number. The quandong, the cranberry, a root called native bread, and some earth nuts, are the only ones known. The floral display in the spring is of great variety; purple violets with an odor like heliotrope, orchises and lobelias, gold flowers, native flax, *Daviesias*, grevilleas, common buttercups, and other flowers, form an exten-

sive catalogue too numerous for this article; while the grasses of the plains grow to a great height, hiding cattle in their luxuriant abundance. To the introduction of foreign vegetables there is absolutely no limit in the suitability of the Australian climate. On the north-east coast, in the Moreton Bay settlement, the Japanese loquat, the date palm and the prickly pear, cotton, sugar, coffee, and tobacco, have been naturalized; while bananas, oranges, and lemons, are exported to all parts of Australia. In New South Wales, Victoria, and South Australia, the cereals flourish with unsurpassed productiveness, and 64 lbs. to the bushel has been produced in Australian wheat. All descriptions of garden produce are of superior character; almonds, figs, apricots, melons, grapes, and quinces, apples, pears, plums, are produced in great quantities, and of a quality that leaves nothing to be desired.—By its mineral wealth Australia has risen at a bound from a *terra incognita*, to one of the most conspicuous regions in the history of the present decade. It had long been known to possess iron, and other minerals; but the discovery of valuable gold deposits on the surface, gave a new impulse to the country. Any attempt to classify the districts in which gold is found would be vain; new diggings are continually opened, and the metal, existing as it does in pure masses, does not seem to depend on stratification, but has probably been upheaved along with other matter, and washed down by surface or subterranean currents. All that can be safely predicated of the materials in company with which gold is found, is that quartz and pipe-clay are very generally associated with it. The quartz is abundant, and is found from minute pebbles worn smooth by attrition, to huge blocks of many tons weight which crop out from the surface in irregular and fantastic forms. It is usually milk-white and opaque, but occasionally attains a semi-crystalline transparency. Beside this, however, gold is found intermixed with sandstone, ironstone, white and blue clay. The range over which gold extends, is altogether undetermined. Recent accounts announce its discovery at the furthest limits of exploration. The profitable diggings have been hitherto confined to the Bathurst district, in the north of New South Wales, and to the hill country in the north and north-west of Victoria. In minute portions it has been found all over the four principal colonies. The gold was at first found in small pieces, on the actual surface; as the surface supply became exhausted, it was found at a short distance down, and the diggings have increased in depth as they have decreased in general richness. At Ballarat, near Geelong, where the most valuable lumps of gold have been found (28, 60, and 186 pounds in weight), the shafts are sunk to a depth of 80 to 100 feet. The gold has never been found otherwise than in detached pieces or particles, varying in size from minute globules to weighty masses. And

where its close contiguity has assumed the character of a vein, it is only that the deposit has been washed together into a subterranean channel or gutter.—Previous to the gold discovery, a copper ore of rare richness was found near Adelaide, in South Australia, well known as the Burra-Burra. Copper has been found in Victoria, while tin, lead, silver, and precious stones of various kinds, have also been discovered in the search for gold, and passed over for the present. Seams of coal have been discovered on the eastern coast, associated with beds of sandstone, and the fossil plants found in it were of a similar character to those in the Damuda coal of India. The coal is abundant, and has proved a veritable mine of wealth in the hands of its proprietors, since the influx of population and steamships to Victoria. Coal of excellent quality has also been found cropping out on the surface at Cape Patterson in Victoria, a point washed by the sea.—The political divisions of Australia since 1851, are, New South Wales, including the Moreton Bay district; Victoria, with its subdivision, Gipps's Land; South Australia, Western Australia; in the northern part of Australia there is the settlement of Port Essington, and another district called Victoria, the territorial limits of which have not been fixed. The island of Van Diemen's Land, or Tasmania, to the south of Australia, is a separate government, and the islands of New Zealand have another government. The governor of New South Wales is the governor-general of the Australian colonies, to whom the other governors are subordinate. This subordination is in point of rank and precedence only, for the various colonies are perfectly independent of each other in every respect. As the residence of the governor-general, Sydney was considered the capital of Australia, and a mint was established there; but the preponderance given by the gold discovery, has made Melbourne the commercial capital, to which, no doubt, in course of time, as the country becomes settled, the tide of emigration will take its course, as its natural advantages are certainly not inferior to that of the other colonies, while it undoubtedly enjoys commercial supremacy. The political history of Australia resolves itself into a very narrow compass. Transportation, its abuses, and final abolition; the public lands; the alternate plethora and depression arising from gambling speculations in land, from good and bad seasons; and, since 1851, the gold discovery and the new constitutions of the colonies, sum up the great questions of Australian politics. War, that ever fertile theme of history, is excluded from consideration.—The early history of Australia is little more than that of its discovery. The Dutch were probably the first to discover the shores of Australia. A small yacht, the *Duyfen*, proceeding from Bantam along the coast of New Guinea, saw the northern coast of Australia in March, 1606. A few months afterward, Torres, a Portuguese commander, gave his name to the straits which separate New

Holland from New Guinea. In 1616, Hartog, another Dutchman, came upon the western coast of Australia and called it *Endracht's* land, from the name of his ship. From this time other parts of the western coast were discovered, and in 1622, the *Leewin* discovered the southern coast at Cape Leewin, and shortly after Van Nuyts sailed from Cape Leewin on the southern coast, to Spencer's gulf. De Witt's Land and Carpentaria, in North Australia, were also discovered by Dutch traders. Capt. Cook discovered New South Wales and Botany Bay, which was so called by Sir Joseph Banks, the botanist of the expedition, from the wonderful floral display which its plains afforded. In 1788, the first English colony was settled in New South Wales. The absence of a fierce native population suggested to the British government, embarrassed then as now with the disposal of its convicted criminals, the propriety of forming a penal settlement in Australia. Accordingly, Capt. Phillip was despatched with a squadron containing 850 convicts, with a strong military guard of 200 men and officers, to form a settlement. There was in this colony every element of disorder and vice. The convicts were gathered together miscellaneously without any pretence of selection. There were but two or three skilled laborers among the mass. The free men were soldiers; the women of the party were in the proportion of 1 woman to 3 men of the convicts, and 40 women to the 190 military. The settlement was made without any previous survey or knowledge of the country, in a spot either so barren that it was incapable of supporting life, or else covered with the heaviest and hardest timber. The new colony, from its position, and want of self-supporting power, must be entirely dependent on the arrival of stores and rations from home, after the precarious chances of a 6 months' voyage. By letters patent the governor was made an absolute despot over the lives and property of the colonists, and full power was granted him over the lands. Terrible were the consequences of this grievous mismanagement and criminal carelessness. Oppressive abuse of authority, debased brutality in the convicts, and horrible cruelty of officials, were the ordinary course of colonial life. Famine was frequent, even among the free men, while the convicts held life so cheap that murder would be committed at any time for 2 or 3 days' rations. In 1793, Gov. Phillip resigned, and in 1795 Gov. Hunter was sent out. A few free settlers had now arrived, who were assisted in the clearance of their lands by grants of convict labor. In 1800 Gov. King superseded Gov. Hunter. In 1803 the "*Sydney Gazetteer and New South Wales Advertiser*," a semi-official paper, was founded by George Howe, a prisoner. At this time the present colony of Victoria was visited by Capt. Collins, with a view of forming a settlement. Unable, however, to find water, and already prepossessed in favor of Van Diemen's Land, he abandoned Port Phillip, and, crossing

less's straits, formed a settlement in Van Diemen's Land, on the Derwent river. During his period it was that Matthew Flinders, and his friend Bass, made their coast surveys, under very difficulty of local discouragement; bad food, limited crews, and bad vessels. The truth and accuracy of these surveys have remained undisturbed to the present time, although Flinders published them at his own cost, and died in neglect and poverty. In 1806 Gov. Bligh, the Bligh of the *Bounty*, was sent out; he was a good seaman, but of rude manners and tyrannical temper. He came instructed to put down the monopoly of spirits, in which the civil and military officials were strongly interested, and the abuse of which made them rich at the cost of the colony, which was steeped in intemperance. In fact, rum had become the ordinary currency of the day. Bligh took his measures neither well nor wisely. He arrested Mr. McArthur, a free settler, and the first importer of the merino sheep to Australia, on a charge of treason. The governor had been as unpopular in the colony as he had been on the quarterdeck of the *Bounty*. Mr. McArthur was generally liked, the officials seized the opportunity of defending their monopoly of spirits, and a military mutiny of the New South Wales regiment was the consequence. Gov. Bligh was deposed and put on board his own ship, the *Porpoise*, and sent back to England. However wrong Bligh was in his mode of procedure, the government could not support this breach of discipline. Col. Johnson and his officers were broken and the regiment disbanded, and Col. Macquarie, a man of energy and intellect, was sent out to reinstate Bligh for 24 hours, and then to take the control of the colony himself. He arrived in 1809, and for 12 years administered the colonial government, and to him was mainly owing the system of general government which converted a settlement of reprobates into a God-fearing and law-abiding commonwealth, and which heralded the advent of that great future to which Australia is destined. At his arrival he found the convicts in a state of slavery to the free colonists and to the government officials. He abolished this state of things, and while punishing the convicts, gave them the opportunity of recovering position in life; and however the results of this course might and did justify a parallel between the disadvantages of honest poverty at home compared with the profit and prosperity of reclaimed felony abroad, the fact is that to his policy is due Australian advancement. Under Gov. Macquarie the Blue mountains were first crossed and the Bathurst plains discovered, over which the governor with his usual energy at once planned and constructed an excellent road. He improved the condition of the convicts; regenerated the moral tone of the colony; effected local improvements; promoted immigration, and placed the administration of affairs on a sound basis. His wife was an amiable and accomplished woman, and

was of the greatest assistance in these social reforms. Gov. Macquarie was impatient, however, of all control, and his remonstrances against all administrative checks on his action prevented, during his governorship, the establishment of a legislative council. In 1821 Gov. Macquarie returned to England, and was succeeded by Sir Thomas Brisbane, and under his government a council, composed of the principal officials, was given to the colony, and in 1824 "The Australian," the first independent colonial newspaper, was published. Sir Thomas Brisbane continued in authority until 1825, when he was recalled in consequence of the complaints against the well-meaning blunders of his administration. During Sir Thomas Brisbane's term the Maneroo plains were discovered, as also the river Brisbane; and the Port Phillip district (Victoria) was brought to the public notice by Messrs. Hovell and Hume. At the period of Sir Ralph Darling, his successor's appointment, there was no trial by jury in New South Wales, but in 1829 trial by jury in civil actions was granted. In 1831 General Sir Richard Bourke took the reins of government, and was by far the ablest and most liberal of the Australian governors. He framed the introduction of liberal principles of government, and aided considerably in elevating the tone of the legislative council. In 1838 he was succeeded by Sir George Gipps, whose life was spent in constant dissensions with the colonists, and the general tone of whose government, though liberal in theory, was opposite to that of Sir Richard Bourke. To Sir George Gipps succeeded Governor Sir Charles Fitzroy, whose principal merit in the eyes of the colonists is that he does not over-govern them. The Colony of Victoria, which was formerly the district of Port Phillip and a dependency of the New South Wales government, was originally settled by colonists who crossed from Van Diemen's Land and squatted. The land had been previously twice abandoned. Vain efforts were made by the colonial office to limit the spread of emigration, and they prohibited the occupation of Port Phillip. But governments are always in the rear of popular sentiment; that which the ministers deprecated had already been accomplished. The colonists of Van Diemen's Land, hearing of the rich unoccupied pastures of Port Phillip, rushed over with their flocks and herds to seize on the prize. In 1837 Sir Richard Bourke laid the foundation of Melbourne on the banks of the Yarra-Yarra, and impressed by the immense agricultural value of Australia Felix, directed land sales. The rush to Port Phillip continued, and land brought incredible prices. The speculation was maintained at fever heat until the crash of 1842 brought down prices, and the colony was just recovering from the distress and ruin of that period, when in 1850 the discovery of gold at Ballarat was announced. Port Phillip continued a district of New South Wales until 1851, when the new act of the imperial legislature came into force,

which constituted it a distinct colony by the name of Victoria, and authorized the formation of a new legislative assembly and a colonial constitution—a privilege which the colonists have not been slow to turn to account with the largest interpretation of their rights. South Australia was founded by the south Australian land company, conducted on the principles of colonization advocated by Edward Gibbon Wakefield. In place of the modern system of allowing capital and population to find their own level, Mr. Wakefield considered it practicable to dam up the stream of emigration by artificial prices of land, and to concentrate labor for the special behoof of capitalists. The delusions on which these schemes were based were plausible enough in the first instance, and secured numerous and influential supporters, but experience has shown the fallacy of the system. A factitious success and a sudden emigration, kept up by flattering accounts at home, elevated the new colony of South Australia to the summit of prosperity, during which, without exports and without local productions, all parties were living on capital. Land and town lots speculation as usual ruled the community, until the dream of bliss was rudely dispelled by general bankruptcy. Adelaide is on the banks of a swamp at the head of the gulf of St. Vincent; it was founded in 1836. The port is about 6 miles from the town. The total failure of the land and labor schemes of the Wakefield party was in some measure compensated by the sale of lands round Adelaide in 80 acre sections, which after the land speculations had blown up, proved the salvation of the colony by keeping together a band of independent cultivators attached to the freehold. But for these the colony would have been ruined. These sons of the soil kept the colony alive, and the discovery of the great Burra-Burra copper mines, which were so productive that the stock soon rose to a great value, helped to restore the colony of South Australia. On the gold discovery in the neighboring colony, a rush of labor took place to the gold diggings. The Burra-Burra mines were deserted, no ore was sent home, and the stock, principally held in England, fell far below par. Again the colony was at the brink of ruin, when the 80 acre farms saved it a second time. Sir Henry Young, the governor, quickly laid out a road to the diggings, which was completed, wells dug, stations erected, and gold escort organized, and thereby gold, the earnings of the Adelaide small farmers, was returned to their families, and the men themselves returned to their homesteads, and saved their harvests, which elsewhere in the colonies rotted where they stood.—Tasmania, or Van Diemen's Land, has scarcely a separate history. Like Victoria, it was originally a dependency of New South Wales. The chief facts connected with its history are, that in 1837 it became the sole receptacle of the felony of Great Britain, and upon its soil have been tried various experiments of philanthropy for the reclamation of these outcasts, whose results

having regard to the peculiar opportunity and experience of the experimentalists, form a valuable normal school in the science of prison discipline. Van Diemen's Land borrows a reflected interest from having been under the charge of Sir John Franklin. Under the head of Tasmania, a more particular account of this beautiful island will be given. The transportation and land questions, although now ended, were so important to the interests of Australia that we feel it necessary to give a brief account of them. After governor Phillips's first arrival, free settlers followed but slowly. In 1821 there were 23,254 free settlers and 13,814 convicts, with 5,000 horses, 130,000 cattle, and 350,000 sheep. The punishment of transportation was really terrible at the outset; but after a more humane and civilized government had been established, the prospect of regaining a place in society, and even of acquiring property by means of land grants, stripped transportation of some of its horrors; and when the practice of assigning convicts to free settlers for compulsory labor was understood in England, the plan suggested itself to friends and relatives at home to make their way to Australia, and there, by procuring the assignment of their friends, to still further alleviate transportation. By this and other devices, as well as by the legitimate course of industry and good conduct, many of the convicts in the course of time came to be leading individuals in the colony. They held large estates, they monopolized all the spirit shops, they were leading merchants and capitalists. Although a line of demarcation early sprang up in colonial society between the "bond" and the "free," it could not be denied that many convicts were eminently respectable in their social relations; while on change, and at the mart, the convict's signature carried as great weight as that of the freeman. Thus, transportation came to be considered a boon, and it was no unusual thing for criminals to request transportation. They naturally preferred a chance of obtaining the fat things of the earth in the southern hemisphere, with only the drawback of never setting foot again in England, to the confinement of home jails without any set off of good whatever. A change was now made in the transportation system. It was decided by the English government that transportation should be so limited that only the worst characters should be sent out; that these should be vigorously employed on public works; and that the system of assignments should be checked. This system pertinaciously followed up induced quite a change in the character of the convict system. The capital punishments by the local authorities of Australia were frightfully frequent; the convicts themselves were subjected to the severest measures; the incorrigibles were drafted off to Norfolk island, which, intended by nature for a paradise, was converted into a pandemonium; and the convict population soon assumed such pro-

portions to the free settlers as to threaten to check free emigration altogether. Escapes were frequent, notwithstanding the vigilance of the authorities, and the runaways, concealing themselves in the woods and joining with the blacks, carried on organized depredations against the wide-apart homesteads and residences of the settlers, in which they were the more desperate from the knowledge that their chances of mercy on recapture were zero. The extent of this evil was so great that the inhabitants of New South Wales and Van Diemen's Land organized an anti-transportation league, in which many of those who once belonged to the convict class were enrolled as members. The measures of the league were so energetic that in 1837 an order in council was issued abolishing transportation to New South Wales, and confining it to Van Diemen's Land. This, however, was far from satisfying the agitation. By a stroke of the pen Van Diemen's Land, one of the most delightful islands in the world, rather larger than Ireland, and particularly suited to European constitutions and to invalid officers of the Indian army, was converted into a huge jail. The great advantages conferred on the island by the concentration of labor, the construction of docks, the fine roads, and other public improvements, were in the judgment of all but government officials more than overbalanced by the terrible deterioration of the social atmosphere consequent on the aggregation in comparatively narrow limits of so great a mass of wickedness. Nor were the evils complained of by the colonists of continental Australia remedied by the limitation of the convict establishments to Van Diemen's Land. Convicts were now only the most infamous criminals. The term of their punishment was 7, 14, 21 years, or life. Those transported for short terms were, at the expiration of their sentence, at liberty to go where they pleased. Thus a number of discharged convicts were annually spread over the colonies; and although many of these proved themselves not to be irreclaimable, nevertheless, with the precaution taken by the government at home, it could scarcely be hoped that such was the usual character of discharged convicts. Another measure operated, however, still worse. Philanthropists in England, anxious to hasten the reformation of prisoners, procured the adoption of the ticket of leave system, by which a convict, working out a certain portion of his sentence without incurring punishment from the authorities, became entitled to a conditional discharge from the remainder of his sentence, subject only to the surveillance of the police. This abridgment of the penalty of the law, while it was merciful to the really penitent, opened a door to hypocrisy and deception. Those who could, by cringing suppleness, succeed in obtaining the favor of the officials, or, by hypocritical religious observances, secure the notice of the chaplains, were sure of their ticket of

leave. The future of such individuals was determined by circumstances. The energetic remonstrances, and the fierce invective and personality hurled at the colonial authorities favorable to transportation, reached its highest pitch during the time of the gold discovery, when it was computed that not less than 9,000 ticket of leave men were on the diggings. The records of crime showed that the terrible outrages against life and property which were committed daily, both in town and country, were almost exclusively the work of convicts. Accordingly, the legislature of Victoria passed an act authorizing the instant deportation of all ticket of leave men. The Van Diemen's Land authorities refused to cooperate, and expressly sanctioned the further issue of tickets of leave. Acts were now passed in Victoria making it penal for a ticket of leave man to be found in the gold colony, and throwing the onus of disproof of the charge on the accused. This clearly unconstitutional act was disallowed by the British government. But a collision between the colonies having become imminent, transportation to Van Diemen's Land was discontinued from 1858.—The land system of Australia differed totally from that adopted in the United States or Canada. In the early days of the colony all the government lands were disposed of by grant from the crown. Military men and officials received extensive grants. Free laboring settlers, in proportion to their means and the number of their family, received grants limited to a few hundred acres. Discharged convicts received small grants to enable them to support themselves. As the colony progressed the lands became slightly enhanced in value, and parties having influence applied for grants, which were freely issued by ministers, although, in the hands of the grantees, they were for the time useless. In time, however, and with the accounts of the large fortunes made from wool and tallow, Australian lands came to be viewed as of more importance. Grants were discontinued and purchase adopted, although in the case of the Australian land company, which was organized with great promises of improved breeds of animals, of exporting emigrants, and of introducing scientific agriculture, a million of acres was granted to them as a basis for their operations. The public lands announced for sale were put at a moderate upset price after survey, and in quantities likely to suit purchasers. But the capitalists and great wool-growing squatters of Australia thought that the creation of a class of independent settlers was prejudicial to their interests. It heightened the price of labor. Representations as to the importance of the interests involved, the general unsuitableness of the country for agricultural purposes, and its admirable adaptation for pastoral purposes, were made with such effect at home that the Wakefield system of colonization was adopted. New land regulations were issued. The upset price of the land was greatly increased, placing

purchase beyond the means of poor men. Squatting was converted into a legal tenure. Immense sections of land were let out to the graziers at a rent proportioned to the number of cattle or sheep they were presumed capable of sustaining. The rent itself being ridiculously low, was still further lessened by being settled in friendly conclave with local officials. In addition to this valuable privilege, a preëemptive right was conceded to the squatter, by which he had a right of purchasing a block of land out of his own run at the upset price, free of all competition, which was in effect shutting out rivals from his whole claim. The next regulation was that any person sufficiently wealthy to purchase a whole tract of land, not less than 5,000 acres, might call on the government for a special survey, and pay his purchase money at the upset price. Finally, all moneys thus expended in the purchase of colonial lands were not to be expended in the advancement of general colonial interests, such as public works or local improvements; but in the procuring of emigrants fitted, by their habits of life, for agricultural and pastoral occupations. Thus it was hoped to secure a full supply of laborers for the sheep-farming capitalists, and at the same time to favor "a class of emigrants who would not be debarred by an upset of price of £1 per acre, so that the land which was not adapted for a class of small but independent farms, might fall into the hands of a landed aristocracy, who possessing the frontages to water, might possess capital sufficient to guard the land against the vicissitudes of the season, as well as to cultivate the interior with advantage." The thorough unsoundness of this system, which was the offspring of Lord Grey's colonial policy, and its tendency to sacrifice the many to the few, was thoroughly developed, and in 1853, under the liberal colonial policy of the duke of Newcastle, the control of the land revenues was abandoned to the colonies, a free constitution granted, and the work of colonization is now allowed to take its natural course.—The gold discovery is the great event of the Australian colonies. The first announcement of it was made in the Bathurst district of New South Wales, by a gentleman returned from California, Mr. Hargreaves. As a mineralogical fact, it was known long before in the colonies and to the home government. Count Strzelecki had announced it, and Sir Roderic Murchison, examining a piece of Australian quartz, had inferred it from his knowledge of the gold washings in the Ural mountains. The discovery of gold in quantities on the Turon river, in South Wales, in 1851, drew a number of diggers to that district. In the latter end of 1851, however, diggings of far greater value were discovered in Victoria, and then commenced an influx of immigrants which, as in the case of California, produced results that set all foresight and calculation at defiance. The Port Phillip district (now called the colony of Victoria) had been only annexed

to the Sydney colony 18 years before, and, as we have seen, had, at a still earlier period in the history of the colonies, been abandoned by Collins; and again, after a superficial government survey, had been pronounced worthless. This despised district was to become the cynosure of the whole world. In 1850, the population of the country was 50,000. In a year after the discovery of the gold diggings it rose to 250,000, notwithstanding the distance from Europe and the expense of the voyage. Ordinary business of all kinds was momentarily suspended. The land cultivation was, for that year, almost abandoned, in favor of the fascinating pursuit of a more golden harvest, in which, at the outset, all seemed to gain prizes. Every article of food and clothing was imported from Europe, and labor and merchandise advanced to prices to which there seemed to be no probability of a limit. Time has brought about a settlement of public affairs in their ordinary channel, and Victoria has the aspect of a settled and highly prosperous country. In 1856 there were estimated to be 100,000 laborers in its mines; which it would require 300 years for that number to exhaust. New South Wales, and its capital, Sydney, has been kept somewhat apart from the feverish speculation of the gold fields, and while sharing in the general flood of prosperity, has maintained a state of calm well-being, pleasantly contrasting with the excitable nature of Melbourne life.—Australian commerce now deals with the great staples of gold, wool, and tallow, to which may be added the copper of South Australia. During the year 1857, so much land has been brought under cultivation, and the fertility of the soil has so well repaid the labor spent on it, that a cargo of wheat has been shipped for the London market. The colonial manufactures are of course few. In the present position of the colonies, importation from Europe is far more profitable. A light cloth, known as *paramatta* cloth, is made at Sydney. There are numerous tan and leather works in the colonies. Paper mills are established; extensive foundries and machine shops are in operation, which, however, import all their iron.—The population of Australia, by the census of 1857, was, in round numbers, 1,043,000; in 1850, the population of N. S. Wales was 187,243; that of Victoria about 50,000. In 1852, the population of Victoria was 250,000; in Sept. 1856, 320,000; in 1857, 414,000. The revenue of the whole of New South Wales, in 1850, was £476,692 sterling. The present revenue of Victoria alone exceeds £3,000,000.—The imports of Victoria for the year ending Sept. 30, 1856, were £10,288,386; exports £12,547,894. The population at the same period was about 320,000, so that the imports would be at the rate of £31 per head. The revenue for the same period was £3,042,522, of which £1,607,854 were custom duties, and £888,058 were from the sale of public lands. The revenue in proportion to population, nearly £10 per head of the whole population, is without parallel

in the world. The gold in 1856, up to Dec. 1, was 8,533,527 oz., valued at £14,184,108. To Dec. 26, 1857, the amount imported into England was £11,226,000. The increase has been steady. In 1854 the gold yield was £8,770,796, and in 1855, £11,856,292.—Religion and education are well provided for in the various colonies. In the early days clergymen were merely chaplains to the great jail system. They trafficked in spirits; were the severest taskmasters, unsparing in punishment, and, although one or two honored exceptions preached the way to heaven, the clergy only aggravated the miseries of life, instead of alleviating them. Subsequently an act was passed for the support of Episcopal churches and schools, to which the enormous proportion of one-seventh of the crown lands was to be devoted. This was unsatisfactory and intolerant; and Sir Richard Bourke had the merit of recommending to the home government, and of introducing the system of universal toleration, by which all denominations of Christians were to receive aid in building places of worship, and also a stipend for their ministers. Sir Richard Bourke also endeavored to introduce a similarly liberal plan of educational establishments, but in this he was opposed by the bishop, and accordingly the schools were founded by the various congregations, and the government gave such assistance as might be expedient. Earnest efforts were made to amend this state of affairs, in which education was almost necessarily imperfect. Local committees were appointed, but until the division of the colonies the utmost that could be done was the establishment of a normal school on the so-called Irish principle, substantially the same as that practised in the United States. Since 1851, however, there has been an educational board; and a regular system of government grants, both for religious and educational purposes, has been organized, which, however, at this present time, is still a party question, one of the election tests, the stricter sectarians objecting not only to general education, but also to receive state support for their ministers, if on the terms of allowing state support to the ministers of other forms of the same faith. There is a university in Sydney; one also in Melbourne.—The railways and public works of Australia, except in Van Diemen's Land, are very imperfect. Previous to the discovery of the gold, there was not surplus capital to be employed in joint stock companies, and the tardy increase of the population did not justify the home government in opening up the country by a system of cheap railroads. Since 1851, however, some progress in that direction has been made. Some years back, a scheme of grand dimensions had been put forward, for connecting Sydney with Adelaide, by means of a railway, but at the end of the first 8 or 10 miles the great Australian trunk line found its terminus. Now, however, the Victorians have managed to construct a

railway of 50 miles, which is about being opened between Melbourne and Geelong. Throughout the whole country the means of internal communication are of the most primitive description. Pack horses are employed, while the heavy traffic is done, from one end of Australia to the other, as in South Africa, by bullock drays, with teams of 8 or 10 bullocks, progressing at the rate of a mile and a half per hour.

AUSTRIA, in German OESTREICH or OESTERREICH (eastern empire), the collective designation of several states of central Europe, comprising at least 4 distinct nationalities, all under the rule of the dynasty of Hapsburg. These states having been acquired by the reigning dynasty at different times, under different circumstances and conditions, have, until very recently, preserved their distinct social and political individuality. It is only since the accession to the throne of the emperor Francis Joseph that the work of union and centralization has been carried on upon broad principles and with apparent success. The total area of the Austrian empire is 256,559 sq. miles, extending from lat. 42° to 51° N., and from long. 8° 30' to 26° 30' E. Its population, according to the census taken in 1854, amounted to 39,411,809. It is bounded W. by Switzerland and Bavaria, N. by Saxony and Russian Poland, E. by Russia and the Danubian principalities, S. by Turkey, the Adriatic sea, the Papal States, Parma, Modena, and Sardinia. The Austrian empire, unlike its more immediate rival, Prussia, is a continuous territory, only 2 districts (Ottaro and Ragusa) being separated from the main body by small strips of Turkish territory. The 21 states or provinces (*Kronlaender* or crownlands), which, according to the reorganizing statutes of 1849 and 1851, constitute the united Austrian monarchy (*Oestreichische Gesamtmönarchie*), are the following: 1, the archduchy of Upper Austria (*Oestreich ob der Enns*), 4,616 sq. miles, pop. 755,250; 2, the archduchy of Lower Austria (*Oestreich unter der Enns*), 7,683 sq. m., pop. 1,714,608; 3, the duchy of Salzburg, 2,764 sq. m., pop. 154,879; 4, the duchy of Styria (*Steyermärk*), 8,664 sq. m., pop. 1,095,078; 5, the duchy of Carinthia (*Kärnten*), 3,984 sq. m., pop. 846,150; 6, the duchy of Carniola (*Krain*), 8,845 sq. m., pop. 505,886; 7, the counties of Goertz and Gradiaka, the margraviate of Istria, and the district of Trieste, 8,065 sq. m., pop. 618,056 (the 3 last-named provinces form the kingdom of Illyria); 8, the county of Tyrol, 11,084 sq. m., pop. 925,066; 9, the margraviate of Moravia (*Mähren*), 8,560 sq. m., pop. 1,972,165; 10, the kingdom of Bohemia (*Böhmen*), 20,012 sq. m., pop. 4,800,818; 11, the duchy of Silesia (*Schlesien*), 1,983 sq. m., pop. 479,821 (these 11 states, comprising 76,210 square miles and 13,861,777 inhabitants, about $\frac{1}{4}$ of the whole empire, are members of the German confederation, and entitle the Austrian emperor to 4 out of 70 votes in the German diet or

Bundestag); 12, the kingdom of Galicia, including the former republic of Cracow (annexed by Austria in 1846), and the duchies of Zator and Anschwitz, both of which belong to the German confederation, 80,115 sq. m., pop. 5,056,647; 13, the duchy of Bukovina, 4,021 sq. m., pop. 480,664; 14, the kingdom of Dalmatia, 4,928 sq. m., pop. 432,387; 15, the kingdom of Lombardy, 8,318 sq. m., pop. 8,009,505; 16, the kingdom of Venice (*Venedig*), 9,198 sq. m., pop. 2,498,968; 17, the kingdom of Hungary (*Ungarn*), 69,170 sq. m., pop. 8,744,481; 18, the kingdom of Croatia and Slavonia, 7,054 sq. m., pop. 967,186; 19, the grand duchy of Transylvania (*Siebenbürgen*), 23,078 sq. m., pop. 2,285,572; 20, the waiwodeship (principality) of Servia, 11,550 sq. m., pop. 1,574,428; 21, the Military Frontier (*Militäergrenze*), 12,922 sq. m., pop. 1,054,794. According to the previous census, taken in 1850 and 1851, the population of several of the more important Austrian states was as follows: Lower Austria, 1,598,047; Upper Austria, 706,316; Salzburg, 146,007; Styria, 1,006,971; Carinthia, 819,224; Carniola, 463,956; Bohemia, 4,409,900; Tyrol and Vorarlberg, 859,706; Moravia, 1,799,888; Dalmatia, 893,715; waiwode of Servia, with Temesvar, 1,426,222; Croatia and Slavonia, 878,456; Transylvania, 2,078,787. Nearly three-fourths of the Austrian territory are mountainous. There are 8 principal chains of mountains, each of them sending off many branches, viz.: 1. The Alps (the Rhaetian or Tyrolese, the Noric, the Carinthian, the Julian or Carniolan, the Dinaric Alps), extending from the Bernardin to the Danube, and covering almost the entire southern belt of the German provinces, as well as Illyria and Dalmatia; their highest peaks are: 1. In Tyrol the Ortles (12,811 feet), and the Gross Glockner (12,158 feet). 2. The Carpathians, 640 to 700 miles long, beginning at the confluence of the Danube and the Morava (March), sweeping in an arch to the confluence of the Danube and Cserna, and covering a territory of 85,000 sq. m. (the different sections of this chain are known as the Central Carpathians or Tatra mountains in Hungary, the Lipitauer Alps, Hungarian Switzerland, the Hungarian ore mountains or Erzgebirge, the Beskides, the lesser Carpathians or White mountains, the Waldgebirge or Forest mountains in Upper Hungary, the Transylvanian Alps). The bold and rugged granite cliffs of the Carpathians near Lomnitz and Kronstadt, rise to a height of more than 8,000 feet above the level of the sea. 3. The Sudete mountains, forming, together with the Bohemian forest and the Ore mountains (Erzgebirge of Saxony), an almost uninterrupted chain of granite and gneiss formation. Its sections are: the Moravian Silesian mountains, the Moravian snow mountains, the Glatzer hills, the Giant mountains or Riesengebirge, the Iser mountains, the Lusatian mountains. The highest elevation in this chain is the Schneekoppe, or snow peak, 4,955 feet above the level

of the sea. Beside these 8 great chains there are several parallel ranges of considerable height. Thus on both sides of the Alps there extend limestone ranges, the northern ones towering up to the height of 9,222 feet (the Dachstein, or roof-peak on the boundary line of Salzburg and Styria), while the southern ones, reaching to the height of 8,794 feet, cover nearly the whole territory of Illyria and Dalmatia. Again, the Carpathians are surrounded by sandstone mountains, which almost fill up the territory of Transylvania. Of large plains there are only the great Hungarian basin, measuring nearly 360 miles N. and S. and 240 miles E. and W.; the basin of the Po, in Lombardy, and the basin of the Morava (the Marchfeld).—The sea-coast of Austria extends from the mouth of the Po to the S. point of Dalmatia, 1,169 miles. Austria belongs to 4 of the great river systems of Europe, those of the Black sea, the Baltic, the German ocean, and the Mediterranean. Rivers emptying into all of these seas rise in Austrian territory. Among the numerous streams the Danube (*Donau*) is by far the most important; it is, in fact, the main artery of the Austrian empire, and may, at no very distant period, become for southern Europe what the Mississippi is for the United States. The Danube, being the largest European river beside the Volga, enters Austria from Bavaria as a stream navigable at all seasons, but its channel has, until recently, offered serious impediments to navigation, most of which have been successfully removed within the last 10 years. Steamboats were first introduced on the Danube in 1830. Since 1835 the Austrian steam navigation company has increased their number from year to year, until, in 1857, it maintained 102 steamboats and propellers, beside 330 barges, scows, &c. The entire length of the Danube in Austria is 360 miles, its average width 600 feet, its average depth from 8 to 42 feet. Most of its tributaries are navigable for small craft, and steam has been introduced on several. The river Theiss, in Hungary, the most considerable of them all, said also to have a greater abundance of fish than any other European river, is navigated by steamboats from Tokay down to the Danube; its entire course has a length of 740 miles. The Save, which enters the Danube near Belgrade after a course of 440 miles is navigable for several hundred miles. Steamboats also ply on the Inn, and since 1857, even on the Salzach, a smaller stream of about 200 miles in length, emptying into the Inn. The other important tributaries of the Danube are the Traun (110 miles), the Enns (170 m.), the March or Morava (220 m.), the Drave, or Drau (400 m.), the Waag (270 m.), the Raab (170 m.), the Gran (161 m.), the Leytha (80 m.). The Moldau, tributary to the Elbe, in Bohemia, is also navigated by steamboats, and so is the Po, in Italy, the only river which empties into the sea on Austrian territory. Ten steamboats and 30 barges are now run on the Po by the Austrian Lloyd, since 1852. The Vistula (*Weichsel*), Dniester,

and Pruth rise within the Austrian empire in Galicia.—The lakes of Austria are numerous, though not very large. The Platten, or Balaton (Mud) lake in Hungary, has a surface of about 400 sq. miles. The Garda-lake in Lombardy, 33 miles long and from 5 to 14 miles wide, is justly celebrated on account of its beautiful scenery; its surface is 218 feet above the level of the sea, its depth 892 feet. The Lago Maggiore, or Langen-See (Long Lake), on the southern slope of the Alps, 686 feet above the level of the sea, covers an area of about 100 sq. m. The only salt lake in Austria is the Neusiedler lake in the western part of Hungary, nearly 20 miles long, and from 5 to 7 miles wide. The Czirknitzer lake, in Carniola, is remarkable as containing some 40 subterranean cavities, through which its waters from time to time disappear and again flow in. Its surface measures about 22 square miles.—The climate of Austria is temperate and very wholesome. From the southern boundary up to lat 46°, the average temperature is 54½° F.; from lat. 46° to lat. 49°, it is 50° to 52°; beyond lat. 49° it is 48° F. The winter is very severe in the mountainous districts, but sudden changes of the temperature are not frequent.—Nature has endowed Austria with a greater variety of productions than any other European state. Platina excepted, all metals abound in Austria. Gold is produced in Hungary and Transylvania, where there are 40 gold mines; silver and the best quality of European copper in Hungary; quicksilver in Carniola (the mine at Idria used to yield 12,000 cwt. of quicksilver per annum); tin in Bohemia; lead in Carinthia; iron almost everywhere (a single mine on the Ore mountain in Styria yields over 15,000 tons annually). Beside these metals the following are produced in smaller quantities: calamine and zinc (about 7,000 cwt.), cobalt (1,800 cwt.), arsenic (260 cwt.), antimony (from 6,000 to 8,000 cwt.), chrome, bismuth (700 to 1,000 cwt.), manganese. Black tourmaline, alabaster, serpentine, gypsum, black-lead, slates, flint, and marble, abound in many portions of the empire. The precious stones found in Austria are: the Bohemian carbuncle, the Hungarian opal, chalcidony, ruby, emerald, jasper, amethyst, topaz, carnelian, chrysolite, beryl. The coal-beds of Austria are considered almost inexhaustible. Of rock-salt there is a bed several hundred miles in length in Galicia, of which only a small portion is worked at the gigantic mine of Wieliczka, a perfect subterranean city, or rather 4 cities, one below the other, extending in a labyrinth of galleries, and hewn into the salt rock 9,500 feet from N. to S., and 8,600 feet from E. to W. Of mineral springs, Austria contains upward of 1,600, of which the most celebrated are at Karlsbad, Marienbad, Teplitz, Franzensbad, Saydschütz, Seidlitz, and Bilin, in Bohemia; Ischl, in Upper Austria; Baden and Pirawant, in Lower Austria; Gastein, in Salzburg; Gleichenberg and Rohitsch, in Styria; Mehadia, in the military frontier district. The vegetable kingdom of Austria

shows the same variety as the mineral. Wheat is the staple produce of the German provinces and of Hungary; buckwheat is raised in the sandy regions; Indian corn, rice, and kidney beans, in Hungary and Lombardy. The finest varieties of apples and pears are raised in Bohemia, Austria proper, and Tyrol. Hungary produces immense quantities of cucumbers, melons, watermelons, pepper, anise, licorice, poppies, chicory, sweet-flag, ginger, flax, hemp, and tobacco. Cotton is raised in Dalmatia, hops in Bohemia, saffron and woad in Lower Austria. The Hungarian wine (more than one-half of the entire wine product of Austria) is an excellent article, some brands being justly counted among the very best wines of the world (Tokay, Mada, Tallya, Menesch). About 76,000 square miles of the Austrian territory are covered with forests, mostly oak, pine, and hemlock, in the northern—maple, stone pine, olive, laurel, myrtle, and chestnut trees, in the southern provinces. Horses are raised everywhere, but only those of the Bukovina are of a superior stock; horned cattle in Hungary and Galicia (buffaloes in Croatia and Transylvania); the finest sheep in Lombardy; goats and hogs in Hungary. The silkworm is reared on a large scale in the Italian provinces, and has recently been introduced in Tyrol, Croatia, Slavonia, Ill- yria, and Dalmatia. Game is plentiful; deer, wild boars, and hares being found almost everywhere; black bears, chamois, lynxes, wolves, and beavers, only in some districts. Oysters are found near Venice, pearl mussels are frequently found in several rivers and creeks of Hungary, as are also leeches.—According to the general census of 1851, Austria had 86,514,466 inhabitants (8,218,597 families), an increase, since 1816, of 82 per cent., and of 14 per cent. since 1826. They live in 864 cities, 2,355 boroughs, and 64,888 villages. Of the cities one (Vienna) has upward of 400,000 inhabitants; 8 (Milan, Prague, and Venice) have more than 100,000; 5 above 40,000; 7 above 30,000; 11 above 20,000; and 85 above 10,000. Of the whole number (according to the statistical tables of 1846, the latest accessible accounts), 15,282,196, or 40½ per cent., belong to the Slavic races, which constitute the bulk of the population in Bohemia, Moravia, Carniola, Dalmatia, Croatia, Slavonia, the Military Frontier, the Waiwodeship, northern Hungary, and Galicia. The Germans number 7,017,195, or 21 per cent., in Austria proper, Salzburg, Tyrol, Styria, Carinthia, western Hungary, Transylvania, Bohemia, and Moravia. The Roman races, numbering 8,102,468, or 21½ per cent. (5,060,877 Italians, 401,094 Friulians, 2,640,492 Wallachs), inhabit the Italian provinces, southern Tyrol, the Littorale, and Dalmatia, Transylvania, parts of Hungary, Bukovina, and the military frontier. The total number of Magyars is given as 5,418,773, not quite 15 per cent. The remaining 2 per cent. consist of Jews (600,000), Armenians (12,000), Greeks (18,000), and Gypsies (100,000). The Slavic race, although the most numerous, is not the

ruling element, being split into at least 7 principal nationalities (5,897,970 Czechs or Bohemians, 3,150,598 Ruthenes, 2,188,380 Poles, 1,158,882 Slovenes, 1,288,682 Croats, 1,584,184 Servians, 24,100 Bulgarians). The Germans, though but $\frac{1}{4}$ th of the entire population, are the ruling race, not merely on account of the nationality of the reigning dynasty, but because German intellectual culture and industry prevail in all the different states, the Italian provinces only excepted. The number of languages or different dialects spoken in Austria exceeds 20, but German is the official language. It is a significant fact that at a Pan-Slavic congress held at Prague in 1848, the delegates of the different Slavic nationalities found themselves under the necessity of using the German language, being unable to understand the different dialects of their own tongue. The density of population is very unequal, but is generally greater in the eastern than in the western portions of the empire. The extremes are Lombardy (327 to the sq. m.) and Salzburg (53 to the sq. mile). Three-fourths (27,400,000) of the entire population of Austria profess the Roman Catholic religion; the members of the Greek Catholic church are estimated at 6 $\frac{1}{2}$ millions, of whom 8 $\frac{1}{4}$ millions belong to the Greek United church; the Reformed (Protestant) church has 2,280,000 professors; the Lutheran church 1,270,000, the Unitarian 46,000. The Roman Catholic church in Austria has 18 archbishoprics and 70 bishoprics. The archbishops of the Greek church reside at Lemberg, in Galicia, and Ofen, in Hungary. In 1842, the number of Roman Catholic monasteries in Austria was 766, containing 10,854 monks; that of the nunneries 157, containing 3,661 nuns. By the concordat with the Holy See, concluded in September, 1855, the Roman Catholic church in Austria has become a power entirely independent of the temporal government. By this treaty the *placitum regium* has been abolished, thus rendering all decrees and ordinances of the pope valid and binding for the Catholics of Austria, without previous sanction of the government. The bishops are empowered to prohibit all books which they may deem pernicious or injurious to the interests of the church; they have also full control over the public schools; they may punish clergymen and laymen for violations of the rules and regulations of the church; they may establish any number of new monasteries,—in short, all the limitations of the papal power established by Joseph II. have been entirely removed, and Austria has become emphatically the leading Catholic power in Europe. At the same time promises have been made to the Protestant churches of a more liberal organization, allowing them a certain degree of self-government, but as yet they have not been realized.—Public education has been in the course of thorough reorganization since 1848. The number of common or primary schools has been steadily increased, until in 1857 it was nearly 26,000, or one for every 1,404 inhabitants.

Reading, writing, ciphering, religion, and morals, are taught in the common schools. Sunday schools have also been introduced. In 1849, 1,560,000 children out of 2,575,000, went to the common schools, and 640,000 to the Sunday schools; but at the present time the proportion is undoubtedly much greater. A decree was promulgated Aug. 18, 1855, compelling parents to send their children to some school or other. According to the report of 1851, there were, at that time, in Austria, 262 colleges (*Gymnasien*), 88 schools for technical sciences (*Realschulen*), 12 agricultural colleges, 3 mining schools, 11 academies of midwifery, 10 universities (at Vienna, Prague, Pesth, Lemberg, Pavia, Padua, Innsbruck, Gratz, Olmutz, and Cracow), 8 academies for technical sciences, 5 mining and agricultural academies, and 9 academies of surgery. In this statement private academies, theological seminaries, boarding-schools, &c., are not included. Since 1852, the direct influence of the Jesuits on public education has been steadily on the increase; since 1857, they have begun to hold "missions" (revivals) even in colleges. The military schools were reorganized in 1852. There are now 12 military primary schools, 12 military colleges, 4 institutions for the training of cadets, 4 military academies, and 4 establishments of a still higher order, corresponding to universities. Institutions for the promotion of higher scientific and artistic culture are numerous. The largest of the public libraries are the imperial library at Vienna, numbering 350,000 volumes; the university library at Vienna, containing upward of 180,000 vols.; the Ambrosian library at Milan (70,000 vols.); the university libraries at Pesth (100,000 vols.), and Prague (100,000 vols.); the Theresianum at Vienna (70,000 vols.). There are many museums, cabinets of science and art, galleries of paintings, &c., in the principal cities of the empire. Several splendid collections belonging to private individuals are always open to the public. Of botanical gardens there are altogether 28, of observatories 9 (at Vienna, Milan, Padua, Gratz, Ofen, Prague, Karlsburg, Eilan, and Kremsmünster).—The public press of Austria is scarcely to be considered as a means of public instruction, wanting as it does the most essential requisite, liberty. Before 1848, the most rigorous censorship rendered any thing like a well-regulated public press a sheer impossibility. During the revolution in 1848, these restraints were removed, and many newspapers sprang up like so many mushrooms. But this unrestrained liberty of the press was of very short duration. On Nov. 23d, Hermann Jellinek, the editor of the *Radikale*, at Vienna, was shot by order of Prince Windischgrätz, and that was the end of the liberty of the press in Austria. Since that time a law for the regulation of the press has been published (1852), giving the police absolute control over the political press, and restoring the censorship in all but the name. Nevertheless great progress has been made. In 1858, there are published

in Austria 98 political papers, and 257 non-political. Of the former, 58 are printed in the German language, 5 in Czech (the Bohemian dialect), 2 in Serbian, 1 in Croatian, 1 in Illyrian, 1 in Ruthenian, 19 in Italian, 8 in Hungarian, 2 in Roumanian, 1 in Greek; of the latter, 125 in German, 21 in the Slavian languages, 89 in Italian, 20 in Hungarian, 1 in French, and 1 in Russian. Some of the large daily papers published in Vienna and Trieste (*Oesterreichische Zeitung*, *Donau*, *Ostdeutsche Post*, *Triester Zeitung*), are among the best and most influential of the continental papers. Austrian literature has no separate existence from that of the different nations composing the empire; still the fact may be mentioned, that many of the best names of modern German writers are those of Austrians (Ladislau Pytker, Anastasius Grün or Auersperg, Nicolaus Lenau, Von Hammer-Purgstall, &c.). Hungary has its own distinct literature.—Austria has a great number of extensive institutions of charity, such as hospitals, orphan asylums, almshouses, &c. In 1849, the number of public hospitals in Austria (Hungary excluded), was 580, that of military hospitals 159, of lunatic asylums there were 40, lying-in establishments 40, founding hospitals 83, institutions for the sustenance of old and indigent persons 1,351, poor houses 7,173. The number of foundlings provided for by the government exceeds 20,000. The hospitals of Vienna, established by Joseph II., are of the size of a small city, and perhaps the best regulated in the world. There are besides 27 hospitals connected with the convents, where over 20,000 persons are relieved annually, without distinction of creed or nationality. Vaccination is enjoined by the government. Every provincial capital has an imperial loan office for the poor, the profits of which are made over to the treasury of the almshouse department.—The total value of the mineral produce of Austria in 1851, was set down at 119,664,781 florins (the florin is equal to 49 cents). Of this sum, nearly one-half (53,194,942) was the value of the salt produced, 40,000,000 that of stones, clay, meerschauts, &c., and 26,469,839 that of metals. The annual yield of the gold mines is estimated at 60,000 oz. (Transylvania alone yielding from 24,000 to 30,000 oz.), that of the silver mines at 1,300,000 oz., of copper at 4,000 tons, of lead more than 6,000 tons. The total quantity of salt produced in 1850 was 6,000,406 cwt., of which 3,224,756 cwt. was rock salt, 2,840,874 cwt. spring salt, and 434,776 cwt. sea salt. The most remarkable increase has taken place in the production of iron and coal. The latest statistics, published in 1857, show the following result:

Austria produced	Raw or Pig Iron.	Cast Iron.
In 1830.....	1,487,836 cwt.	151,687 cwt.
1850.....	3,217,064 "	498,704 "
1856.....	3,945,208 "	556,005 "
1854.....	4,151,505 "	583,446 "

Still the product is not yet equal to the demand, although the time seems to be near at hand when Austria will be entirely independent of

England. Already all rails laid on Austrian railroads are of home manufacture, and actual experience has proved them far more durable than English rails. The coal produced in Austria, which in 1838 netted only some 4,000,000 cwt., reached, in 1854 and 1855, full 30,000,000, having increased at least 600 per cent. in 17 years. But, nevertheless, the iron and coal production of Austria is only in its beginning.—Agriculture in Austria shows very different characteristics in the several provinces of the empire, not only on account of the different climate, soil, and traditional customs of the people, but especially on account of different laws and institutions. Thus, for instance, the Italian provinces have for centuries enjoyed the benefit of sagacious legislation on the use of streams and water power for the purpose of irrigation. In Hungary the *commassation* or combined working of all the farming lands belonging to the proprietor is being carried on, affording a substantial basis for rational culture of the soil, which, as yet, is wanting in other provinces. In some of the provinces the dismemberment of farming estates is prohibited by law, in others not. In Italy, farming is mostly carried on by "colonists," or tenants who pay from one-half to two-thirds of the proceeds to the proprietor of the soil, while in Croatia there prevails a sort of communism, a number of families cultivating a common estate and dividing the profits. In the mountainous regions the farms are for the most part small but well cultivated, while Hungary boasts of gigantic estates comprising many square miles. Taking into account these general characteristics, the Austrian empire may, as regards its agriculture, be divided into 4 sections: 1, the Alpine countries: Austria proper, Salzburg, Tyrol, Carniola, Carinthia and Styria; 2, the eastern provinces: Hungary, Croatia, Slavonia, the Military frontier, and Transylvania; 3, the northern provinces: Moravia, Bohemia, Galicia, Bukovina; 4, the southern provinces: Lombardy, Venice, and Dalmatia. In the Alpine countries, the area of the productive soil is 24,446,000 acres, of which 15,818,000 are woodland and pasture, while only 8,628,000 remain for agriculture and meadow land. The density of the population compels the farmer to till even the steepest hill sides. The narrow plains yield potatoes, barley for brewing, and fodder; on the sunny sides of the mountains the grape vine is cultivated extensively. The production of bread stuffs in these countries is not equal to the consumption. The agricultural condition of those portions of the eastern provinces covered by the Carpathian mountains is similar to that of the Alpine countries. But the scanty proceeds of these territories are largely made up by the surplus of the level country, which, with very few exceptions, is of extraordinary fertility, especially in the river bottoms. Of an aggregate of 67,586,000 acres of productive soil, less than 31,686,000 is covered by forests, and 21,500,000 by pasture; the remaining 35,950,000 acres are cultivated, but

a large proportion of the pasture land is entirely capable of cultivation, and would be put under plough but for want of labor. Even now these countries produce upward of 192,000,000 bushels of bread stuffs, nearly one-half of the entire produce of the empire (477,000,000 bushels). The most fertile regions, although thinly populated, produce a large surplus for exportation to the Alpine countries. The extensive pastures are used for cattle raising. Draught cattle are exported to nearly all adjoining regions; beef cattle mostly to the Alpine provinces. The wool product, although diminished somewhat by the recent partition of the common pastures, exceeded 280,000 cwt. in 1851. Hog fattening is carried on upon a very large scale. The Hungarian wine and tobacco are noted for their excellent quality. The eastern provinces produce about 500,000,000 galls. wine per annum, part of which is exported to the other provinces and to foreign countries. In the northern provinces but few places are adapted to the culture of the grape. The influence of the northern climate is here felt everywhere. Moravia, belonging to the basin of the Danube, has some large and fertile plains, but Bohemia is hilly to a great extent, Silesia entirely so, while Galicia, descending as it does from the Carpathians to the courses of the large streams, shows every variety of formation. Grain and potatoes are the staple produce of these countries, supplying the domestic demand. Breweries, distilleries, and beet sugar factories, are numerous in these provinces. The entire number of beet sugar establishments, in 1853, was 128. The area of the productive soil is 87,888,000 acres, of which upward of 28,008,000 are arable or meadow lands, and 14,389,000 forests and pasture. In the Italian provinces higher temperature calls forth a rich vegetation, and the cultivation of the soil is carried on so carefully that the plains appear like vast gardens. The productive soil of these provinces is nearly 12,942,000 acres, of which but 2,157,000 acres are covered by forests, and 8,451,200 acres are pasture. In the hill country Indian corn is the staple product, mulberry trees are planted in the fields, and grape vines climb from tree to tree. On the plains a complete system of irrigation has been in use for centuries. Thus, in Lombardy alone, 1,049,740 acres are irrigated by 51 main channels. Meadows irrigated this way (some 7,000 acres) are out 5 times a year, and some in the environs of Milan nine times a year. The dairy produce of Milan and Venice is excellent in quality, and in quantity nearly one-half of the aggregate product of Austria. Thus, they produce 980,000 cwt. of cheese, while the aggregate of Austria is but 2,000,000 cwt. The quantity of wine produced per annum is about 120,000,000 galls., that of raw silk, 447,000 cwt., while all other provinces produce only 44,000 cwt. Altogether, the area of the productive soil of the whole empire is 143,862,000 acres, of which 67,442,200 is woodland and pasture, and 74,919,800

arable and meadow land. The aggregate value of the agricultural produce of Austria was estimated, in 1857, by Herr von Kleyla, assistant secretary of state, at 2,500,000,000 fl. The largest product is that of Lombardy, viz., six times that of the poorest province, Dalmatia. Austria proper, Bohemia, Moravia, Styria, Tyrol, and Venice, severally produce about two-thirds of the value of the produce of Lombardy; Silesia, Croatia, Salzburg, Carniola, Carinthia, Hungary, and the Military frontier, about one-half; Istria, Galicia, Transylvania, and Bukovina, less than one-half.—The government of Francis Joseph has diligently endeavored to promote agriculture and cattle-breeding by agricultural fairs, exhibitions of improved agricultural implements, by according premiums for improved stock, by the introduction of new branches of agriculture, and other measures. In this respect, incessant attention has been paid to the American improvements of agricultural implements and machinery. The culture of some American plants has also been introduced, broom-corn among others.—The number of horses in Austria, in 1851, was 3,229,889, exclusive of 75,000 cavalry horses; that of horned cattle, 10,410,484; of sheep, from 25,000,000 to 80,000,000; of goats, 2,278,900; of swine, 7,401,800.—The total value of the annual produce of agriculture and cattle-breeding in Austria is estimated at \$1,500,000,000.—Austrian manufactures, whose existence may be said to date only from the reign of Joseph II., are now striving to rival those of every other European nation, England excepted. The number of manufacturing establishments, exclusive of the small trades, has been set down at 12,000, which is probably too high; the number of hands employed by them at 2,500,000; the value of their annual produce at \$600,000,000. Of this sum, \$27,000,000 is the estimated value of the iron ware, \$27,500,000 that of chemical preparations, \$9,000,000 that of glass ware and looking glasses (equal in quality to the French), \$1,000,000 that of pianos. Hemp and flax, worth in a raw state about \$26,000,000, are manufactured into goods worth \$65,000,000. The value of the woollen fabrics is upward of \$50,000,000 (broadcloth \$22,000,000). The silk manufacture produces about \$30,000,000 per annum. The number of cotton mills in Austria in 1850 was 208, employing 29,153 persons; the total number of persons employed in cotton factories, dyeing, and printing establishments, near 400,000; the total value of cotton goods produced, \$40,000,000. Of this sum \$10,000,000 ought to be deducted, being the value of the raw cotton and yarn imported from England. The quantity of cotton manufactured in Austria was, in 1850, 5 times as large as in 1831. The manufacture of tobacco is monopolized by the government (the monopoly having been extended over Hungary, which formerly was excepted from it, in 1850). It yields a net profit per annum of at least \$10,000,000. Friction matches are manufactured in 82 establishments, employing over 8,000 per-

sons, and producing (in 1849) over 50,000 cwt., of which one-fifth is exported, mainly to South America. The most numerous and extensive industrial establishments are in Austria proper (Vienna), Bohemia, and Lombardy, the least and smallest in Dalmatia, and the Military frontier. There are 4 principal centres of industry: Vienna, for the manufactory of all objects of luxury and musical instruments; Milan and Venice, for silk goods; Moravia, Silesia, and Bohemia, for linen and woollen textile fabrics and glassware; Styria and Carinthia, for iron goods and hardware. The government endeavors to promote the growth of Austrian industry by establishing schools of mechanical arts, trade-unions, industrial exhibitions, &c. In order to encourage inventors the patent laws were entirely remodelled in 1852, and in 1856 the draft of a law for the regulation of mechanical trades was published, which, it appears, was considered altogether too liberal by the tradesmen themselves.—The commerce of Austria has, since 1816, gradually grown into importance, although crippled until 1850 by a prohibitory tariff, and by the political organization of the empire, being at that time merely a dynastic union of different states, and rendering the provincial boundary lines so many barriers against internal intercourse. At an early period the Austrian government took care to spread a perfect network of excellent commercial roads over the whole empire. The high-roads of Austria, in 1856, had an aggregate length of more than 30,000 miles. The new roads over the Alps, the Stiller Joch, the Splügen, the Semmering, and others, are justly counted among the most remarkable works of modern times. The first railroad in Germany was built on Austrian territory, connecting Budweis and Lintz (1832). The emperor Ferdinand's Northern R. R. (from Vienna to Oderberg) was soon followed by the Southern R. R. (from Vienna, *via* the Semmering mountain, to Trieste), the Northern R. R. (from Olmutz to Prague), the Hungarian Central R. R. (from Marchegg to Pesth, and from Szolnok to Debreczin and Arad), the North-eastern R. R. (from Cracow to Lemberg), the Ferdinand's R. R. (from Venice to Milan), the Milan and Como R. R. Within the last 3 years companies have been incorporated for the construction of railroads from Vienna to Lintz and Passau, connecting with the Bavarian railroad system; from the Saxon frontier to Brünn and Olmutz; from Presburg, *via* Szolnok, to Szegedin; from Oranizza to the Danube; from Szegedin to Temesvar; from Raab, *via* Stuhlweissemburg, to Fünfkirchen, Essegg, and Semlin; from Ofen to Kanischa and Fünfkirchen; from Vienna, *via* Oedenburg, to Fünfkirchen; from Prague, *via* Karlsbad, to Eger; from Budweis to Eger. Telegraph lines have been constructed in all directions. On Jan. 1, 1857, there were in Austria 5,185 miles of electro-magnetic telegraph, with an aggregate length of wires of 7,297 miles. Of canals there are altogether 35 in Austria, whose aggregate length is

about 500 miles. The most important for commerce is the emperor Francis's canal, connecting the Danube and Theiss, and saving a circuit of 220 miles. Among the numerous canals of Lombardy and Venice the Naviglio Grande, 87 miles long, from Ticino to Milan, and the Naviglio della Martisana, 28 miles long, uniting Milan to the lake of Como, deserve to be mentioned.—Every effort is being made to put the commerce of Austria upon an equal footing with that of other continental nations. On July 1, 1851, the customs line between Austria proper and Hungary was abolished; on Feb. 1, 1852, a new tariff was published, by which the protective system was introduced in lieu of the previous prohibition, which was now limited to 8 articles of government monopoly, viz, salt, gunpowder, and tobacco. In 1852 the river duties on the Elbe, Po, and Danube, were abolished. A postal union having been concluded with most of the German states in 1850, was followed (in 1853) by a commercial treaty between Austria and the German Zollverein. On Aug. 9, 1852, perfect commercial reciprocity was established between Austria, Modena, and Parma. Commercial treaties have also been concluded by Austria with the United States, Mexico, Russia, Naples, Tuscany, Chili, Sardinia, Turkey, and Persia.—Among the large moneyed institutions the National bank of Vienna maintains the highest rank, although its importance is much more due to its intimate connection with the financial administration of the empire than to its commercial transactions. A most powerful institution is the Austrian Lloyd, at Trieste, a joint-stock company established by Von Bruck in 1833, and unrivalled in the variety of its enterprises. It is divided into 3 sections: one devoted to the insurance business and the collection of important statistics for the maritime trade, the second (established in 1837) to ocean-steamship navigation, the third (established in 1849) to the promotion of literature and art. This company has gradually been developed into gigantic proportions, almost monopolizing the Levant trade on the eastern portion of the Mediterranean. It has established regular steamship lines between Trieste and almost every port on the Adriatic, Ionian, and Black seas. The number of its steamships in 1858 was 56, but can now scarcely fall short of 70. Another great institution is the Danube steam navigation co., founded in 1835, which in 1857 maintained 102 steamboats, worth \$5,000,000, beside 830 freight boats. The first river steamboat in Europe built on the American pattern was built for this company in 1854. Early in 1856 the *Credit-Anstalt*, at Vienna, an imitation of the Paris *Société de Crédit Mobilier*, went into operation, the subscription to its stock having reached the enormous amount of 640,000,000 florins, or upward of \$300,000,000, but the strong impulse given by this institution to speculation and stock-jobbing has already, at the beginning of the year 1857, led to a violent financial revulsion. The total value of the com-

mercial movement of Austria in 1856 and 1857 is shown in the following table, published in February, 1858:

	1856. Florins.	1857. Florins.
Imports.....	239,481,803	281,982,923
Exports.....	251,485,600	231,018,109
Customs from Imports.....	90,959,199	19,179,777
Customs from Exports.....	569,694	494,717

Showing a decrease of imports in 1857, against 1856, of 7,498,880 florins, and a decrease of exports of 20,417,491 florins. The value of the contraband trade is roughly estimated at 40,-000,000 florins. In 1850 the trade of Austria with the German states represented a value of 84,107,000 florins. The entire revenue from the customs was, in 1852, 22,904,000 florins; the revenue for three-quarters of 1856 (Jan. 1 to Sept. 30), 16,182,018. Altogether the revenue from customs is less than one-tenth of the entire revenue. —The increase of the shipping of Austria within 15 years is shown by the following table:

	Vessels.	Tons.	Men.
Austria had in 1841	5,574	215,593	
" " " 1849	6,053	259,583	employing 27,886
" " " 1854	9,745	269,427	" 84,106
" " " 1855	9,863	346,659	
" " Dec. 1856	10,006	380,469	" 86,802

Of these 657, carrying 233,978 tons, were ocean vessels; 68, carrying 89,088 tons, and 13,240 horse-power, steamships; 499 large coast vessels. The increase of ocean vessels from Dec. 1855 to Dec. 1856 was 23; that of steamships 10. In 1856 the maritime commerce of Trieste amounted to 280,000,000 florins, viz.: imports, 121,000,000, exports 109,000,000. Trieste is by far the most important seaport of Austria, and, beside Marseilles, perhaps the only one on the European continent which has advanced at a very remarkable rate. The time seems not to be distant when Trieste, as the commercial centre of the Mediterranean, will vie in splendor and greatness with Venice of old. Venice itself, which had become quite decrepid as a commercial city, has again revived somewhat since 1830, when it was declared a free port, but her trade and shipping are not more than about one-fourth of those of her more lucky rival. The port of Fiume is the main outlet of the Hungarian trade; that trade also resorts to Buccari, Buccarizza, Portone, and Martinschizza, employing altogether some 2,000 coasting vessels. —The unit of the Austrian currency is the gulden, or florin, at 60 kreutzers at 4 pence each. One gulden equal to 49 cents. In the Italian provinces a coördinate unit of currency is the *lira* = $\frac{1}{2}$ gulden = 16 $\frac{1}{2}$ cts. Silver coins are: the specie dollar = 2 fl., the gulden, the zwanziger (20 kreutzers), and quarter specie-dollars or half-gulden (30 kreutzers). In consequence of the currency convention between Austria and the other German states (1857) Austria coins also convention-dollars at 1 $\frac{1}{2}$ fl., equal in value to the German *thaler*. Gold coins are the ducat = 4 $\frac{1}{2}$ fl., sovereign d'or = 6 $\frac{1}{2}$ fl., double sovereign d'or = 13 $\frac{1}{2}$ fl., Venetian sequins, at 4 fl. 32 kreutzers. The long measures are 1 klafter = 6 feet, 1 foot = 12 inches. The Vienna foot is equal to 1.08718 foot in the United States,

1 Vienna sq. foot = 1.075688 American sq. foot. One ell = 2.465 American feet, or 0.85217 yd. The Venetian foot = 1.1408 American foot. One Austrian post-mile = 4,000 klafter or 24,000 feet, equal to 4.71422 miles in the United States. The Venetian miglio = 5,000 feet = 1.08037 American mile. Land measure: 1 Vienna *joch* = 1,600 sq. klafter = 1.42233 American acre; the Venetian *migliajo* = 0.74702 acre. Grain measure: 1 *metzen* = 16 *maassel* or 256 *becher* (cups). One *metzen* = 1.745405 bushel. Liquid measure: 1 *maass* (measure) = 4 *seidel* = 0.37859 gallon; 1 *eimer* = 40 *maass*; 1 wine-eimer = 14.9546 galls.; 1 beer-eimer = 42 $\frac{1}{2}$ *maass*. The Venetian *staja* = 2.8644 galls. Weight: 1 pound = 32 loth; 1 centner (cwt.) = 100 pounds = 123.46 pounds avoirdupois or 150.04 pounds troy weight in the United States. Silver weight: 1 pound = 2 marks; 1 mark = 433.1019 troy grains; 100 Vienna marks = 75.191 pounds troy weight. Gold weight: The ducat as weight is equal to 60 grains; 1 Vienna mark gold = 80.4 ducats. Apothecaries' weight, 1 pound = 12 ounces or 96 drachms, or 288 scruples, or 5,760 grains; apothec. pound = $\frac{2}{3}$ pound commercial weight or 24 loth. One Austrian apothec. pound = 1.12531 pounds troy weight. —The Austrian monarchy is an empire hereditary in the Hapsburg-Lorraine dynasty. The "principles to constitute the basis of the organic institutions of the crown-lands," promulgated Dec. 31, 1851, may be considered the constitution of the empire. According to them the Austrian empire is an indivisible unit. The ministers of the crown are responsible only to the emperor. Committees, or boards, composed of representatives of the hereditary nobility, freeholders, and tradesmen, shall be constituted in every province, but their privileges are limited to giving advice to the governors. All subjects are equal in the eyes of the law. All remnants of feudal rights, vassalage, serfage, socage, &c., are abolished forever. To every religious denomination recognized by law free religious exercise and self-government are guaranteed. These principles have, as yet, been carried out only partially, especially in respect to the provincial committees designed as a kind of substitute for popular representation. A general law for the regulation of the self-administration of city and town corporations, promised repeatedly since 1851, was only in course of preparation in 1857. The administration of the military department having, in 1853, been transferred to a separate board, under the immediate control of the emperor (*Militär Obercommando*), the ministry is now composed of 6 departments only, viz.: 1, imperial household and foreign affairs; 2, interior; 3, public worship and education; 4, finances; 5, justice; 6, industry, commerce, and internal improvements. The council of state, or *Reichsrath*, composed of 12 members, is a body coördinate to the ministry, and communicating immediately with the emperor; they are the personal advisers of the monarch. The provinces, or crown-lands, are governed by governors, *Statt-*

halter, or provincial presidents (*Landespräsidenten*). They are divided into circles (counties), districts, and townships. Municipal officers are elected by citizens possessing a certain amount of property and paying a certain amount of taxes; in some instances they are appointed by government. The administration of justice was completely reorganized in 1851. All privileged jurisdiction has been entirely abolished. There are 8 degrees of jurisdiction. The district courts and district collegiate courts have original jurisdiction in civil suits up to a certain value, and in petty criminal cases, and the county courts (*Landesgerichte*) have original jurisdiction in all other civil cases and in all criminal cases, which, under the law of 1848, were to be tried by juries; they have also appellate jurisdiction in cases to be tried by the district courts. The provincial courts (*Oberlandesgerichte*), of which there are 19, are the courts of last resort for cases tried by the district courts, and of second resort for civil cases tried by the county courts. The highest tribunal of the monarchy is the court of appeals (*Oberster Cassationshof*), at Vienna. Beside these courts there are so-called *Causalgerichte*, such as boards of trade having special jurisdiction in certain commercial matters, courts concerning questions of exchange (*Wechselgerichte*), courts of admiralty, and courts of miners' law. A limited publicity is given to the proceedings of the provincial courts. The civil law is administered according to the code of 1811. The criminal code of 1804 was amended in 1852.—The finances have at all times been the sore point of the Austrian administration. Having been utterly prostrated by the Napoleonic wars, their condition was slowly improving when the revolutionary tornado of 1848, and the consequent wars in Italy and Hungary, again brought Austria near the verge of bankruptcy. The government paper currency fell some 20 per ct. below par. Still, the prospects began to brighten, when the oriental war and the position of armed neutrality maintained by Austria once more destroyed every hope of bringing the income and the expenditure to balance each other. The income has been steadily increasing, it is true, but so has the expenditure. By keeping a separate account of the "extraordinary expenditure" (which has diminished since the conclusion of the peace, although still but little less than the ordinary expenditure), the Austrian government organs manage to cipher out an improvement of the financial condition, but this is, of course, an illusion. The ordinary income and expenditure are shown at a glance on the following table:

	Income. Florins.	Expenditure. Florins.	Deficiency. Florins.
1847.....	151,738,151	202,141,501	47,403,350
1848.....	131,519,615	186,079,496	54,559,871
1849.....	144,018,759	239,468,048	145,454,990
1850.....	191,394,457	268,458,060	77,163,603
1851.....	228,253,068	278,430,470	50,177,402
1852.....	234,365,108	279,512,439	45,147,331
1853.....	257,184,968	293,940,523	36,755,555
1854.....	245,238,724	294,598,321	49,359,597
1855.....	268,508,915	300,875,569	32,366,654
1856.....	268,508,794	321,377,664	52,868,869

The income of 1856 was made up by 92,181,812 fl. from direct taxation (against 87,965,257 in 1855), 148,885,459 from indirect taxation, customs, &c. (against 139,190,769 in 1855), 9,506,159 revenue from government property, 10,088,692 surplus of the sinking fund, 7,896,674 from divers sources. Of the expenses 84 per ct. (108,695,558) was for the army and navy, 27 per ct. (88,032,650) for payments on behalf of the public debt, 9 per ct. (28,197,555) for the department of finances, as much (28,336,757) for the department of the interior, less than 5 per ct. (15,425,421) for the department of justice, 3½ per ct. (10,897,169) for the police department, 2 per ct. (6,420,623) for the imperial court. The deficiencies have been covered by new loans, by the income from the commutation of ground-rent, and by the sale, for a term of 90 years, commencing from Jan. 1, 1855, of several government railroads (1, from Bodenbach to Brünn and Olmutz; 2, the South-eastern R. R., from Marchegg to Szolnok and Szegedin; 3, from Lissawa to Oranizza and Basiach) and several mines, the former bringing 65,450,000 fl., the latter 11,550,000. The funded debt of Austria, in 1848, amounted to 831,706,654 fl., and, on Jan 31, 1850, to 1,023,200,000. Since that time the following new loans have been made: Sept. 1851, 85,569,800 fl.; May, 1852, 35,000,000 fl.; Sept. 1852, 80,000,000 fl.; March, 1854, 50,000,000 fl.; Nov. 1854, 350,000,000 or 400,000,000. The last mentioned is a great national subscription loan, which was to be considered as a voluntary matter, in imitation of the French subscription loans, but it was, in many instances, simply a compulsory loan. The amount realized in this way cannot be stated exactly, many subscribers, especially in the Italian provinces, having failed to pay their quota. Altogether the funded debt of Austria has doubled within 7 years, being 1,623,769,800 fl., if the sum raised by the subscription loan of 1854 has not exceeded 350,000,000, the minimum which was to be realized by any means. In 1858 a new lottery-loan of 40,000,000 was contemplated. If this should be effected the total indebtedness of the empire would be 47 fl. for every inhabitant. Now the indebtedness of the kingdom of the Netherlands, reduced to the 5 per ct. rate, is equal to 200 fl. for every inhabitant; that of Great Britain 180; of France, 90; of Belgium, 60; but then the taxable capacity of Austria is so much inferior to that of these kingdoms that her indebtedness is, comparatively, a heavier burden. In 1852 government took the property of minor orphans under its charge, a measure which has always been considered as a concealed loan. The total amount of this property has been estimated at 950,000,000 fl.—The army of Austria is, according to the reorganizing act of Nov. 1, 1849, divided into 4 departments (*Obercommando*), comprising 14 army corps, beside the Croatian-Slavonian and the Dalmatian civil and military department. The army, consisting of 96 brigades, 10 divisions, 135 batteries, with 1,140

pieces of ordnance; numbers in peace, 420,000, in war, 680,000 men. The sub-divisions are: 1. Infantry: 62 regiments of the line, 14 regiments of frontier men, 1 regiment of Tyrol riflemen, 25 battalions of riflemen. 2. Cavalry: 8 regiments of cuirassiers, 7 regiments of dragoons, 11 regiments of uhlans, 12 regiments of hussars. 3. Artillery: 12 regiments of field artillery, 1 regiment of coast artillery, 1 regiment of rocket mortars. 4. Two regiments of engineers and one corps of pioneers. 5. Three battalions for field-hospital service, one corps of messengers, the dragoons and infantry of the staff. 6. Six regiments of gens d'armes, 4 garrison battalions, and 2 Bukovina frontier battalions. Among the fortresses of Austria, Comorn in Hungary, Olmutz in Moravia, Peterwardein in the Serbian military frontier, Mantua, Venice, and Verona in Italy, are the strongest. Since 1855, great efforts have been made to render Cracow an important point of defence against Russia, the strongest fortress of the empire.—The Austrian navy, according to the *Annuario Marittimo* of 1857, consists of 11 paddle-wheel steamships, 5 screw steamships, 5 frigates, 5 corvettes, 7 brigs, 5 goelettes, 2 prames, 1 bombarde, 34 peniches, 18 gunboats, 5 schooners, 9 trabacles; altogether 107 vessels, carrying about 850 guns. In 1857, two screw steamships of the line, and another ship of the line, each carrying 90 guns, were in course of construction. Beside these, there is a flotilla of gunboats plying upon the Danube, and another on Garda Lake. The supreme command of the navy is seated at Trieste, where there is also a naval academy. The navy yards are at Trieste, Venice, and Pola. The corps of naval officers consists of 2 vice-admirals (the archduke Max and Baron Bujacovich), 8 rear-admirals, 7 captains of ships of the line, 7 commanders of frigates and corvettes, 81 lieutenants of ships of the line, 25 lieutenants of frigates, 44 first ensigns, 47 second ensigns, and 116 midshipmen.—We now come to the purely historical portion of our subject. The present archduchy of Austria having in ancient times been inhabited by the Celtic tribe of Taurisci, afterward Norici, was conquered by the Romans in the year 14 before Christ. During the first centuries of the Christian era, that portion of Austria north of the Danube belonged to the kingdoms of the Marcomanni and Quadi, part of Lower Austria, and Styria, including the municipium of Vindobona (Vienna) to Pannonia, the rest of Lower Austria and Styria, also Carinthia and part of Carniola to Noricum, Tyrol to Rhætia. These political divisions disappeared during the migration of nations, and since 568 the Enns river has constituted the boundary between the Teutonic nation of the Bajuvari and the Avari. Charlemagne annexed the country of the Avari to the German empire (791). It was then called Avaria, or Marchia Orientalis (eastern territory), or Austria, constituting, since 843, the easternmost district of Germany. Having been conquered

by the Magyars in 900, it was ultimately reannexed to Germany by Otho I. in 955. In 983 Leopold von Babenberg was appointed margrave of Austria. His dynasty remained in possession for 268 years, adding largely to its territory by the annexation of Styria and Carniola, by conquests from the Slavic tribes and by inheritance. Under the reign of Henry Jasomirgott, Austria was erected into a hereditary duchy. Frederic, the last of the Babenberg dynasty, already contemplated the erection of Austria into a sovereign kingdom, when, by his sudden death in battle against the Magyars, his line became extinct (1246). The German emperor, Frederic II., immediately claimed Austria as a vacant fief of the imperial crown. But neither he nor his son, Conrad IV., succeeded in establishing their authority, and in 1251 the Austrian States elected Ottocar, second son of the Bohemian king, Wenceslaus, duke of Austria and Styria. Having refused to acknowledge Rudolph of Hapsburg as German emperor, Ottocar was defeated by him (1276), and compelled to relinquish all his possessions to the victor. Determined to reconquer them, he again waged war against the emperor, but was overpowered, and slain on the battle-field (Aug. 26, 1278). From that time up to the present day the dynasty of Hapsburg has ruled in Austria. Rudolph's son and successor, Albert, obtained, in 1301, the Swabian margraviate. At his death (1308) Austria had already an area of 26,584 square miles. His 5 sons having divided the Austrian possessions, they were united again by Albert II. (1335). Another division took place among the heirs of Albert II., when Albert III. got Austria proper, Leopold all the rest. Leopold was slain in battle against the Swiss, near Sempach (1386), but his descendants remained in possession of Styria, and inherited the duchy of Austria in 1457, when Albert's line became extinct. Frederic III. of Austria having been elected German emperor, elevated Austria to the rank of an archduchy. His son, Maximilian I., who succeeded him in 1493, obtained the Netherlands by marrying the heiress of Charles the Bold, duke of Burgundy, also Tyrol; and by marrying his son Philip to the daughter of Ferdinand the Catholic, brought the Hapsburg family upon the throne of Spain. Thus Philip's son, Charles I. of Spain, became, under the name of Charles V., German emperor (1519). He, in 1520 and 1521, ceded the Austrian possessions to his brother, Ferdinand I. Ferdinand obtained the kingdoms of Hungary and Bohemia by marrying the sister of King Lewis II. Thus, elevated to the rank of one of the great European powers, Austria had an area of 114,806 square miles. But the possession of Hungary was not undisputed. John Zapolya, aided by the Turks, tried to wrest the iron crown of St. Stephen from Ferdinand, and in 1529 the sultan Solymán had already invested Vienna, when the prudent generalship of count Salm compelled him to retire. By a treaty, concluded in 1537, Zapolya

got one-half of Hungary and the title of king, while the possession of Transylvania was guaranteed to his descendants. Even after Zapolya's death Ferdinand could reënter into possession of Lower Hungary only by paying an annual tribute of 80,000 ducats to the Turks. In 1564 Austria was once more divided among Ferdinand's sons, Maximilian II. (German emperor, 1564-1576) receiving Upper Austria, Hungary, and Bohemia; Ferdinand, Tyrol and Lower Austria; Charles, Styria, Carinthia, Carniola, and Goerz. Rudolph II., successor to his father Maximilian (1576-1612), one of the feeblest and worst emperors Germany ever had, was compelled to cede Bohemia and Austria to his brother Matthias, under whose reign (1612-1619) the famous 80 years' war originated, by the refusal of the Bohemian Protestants to acknowledge the Hapsburg dynasty. Ferdinand II., brother of Matthias (1619-1637), having defeated the rival king elected by the Bohemians (1620), led a war of extermination against the Protestants of Bohemia and Moravia, expelled them by thousands from his dominions, and annulled all ancient privileges of the states. Bohemia was entirely devastated by this monster, and has never recovered from the calamity. Of its 782 cities, only 180 remained at the close of the war; of 80,700 villages, not over 6,000; of 8,000,000 inhabitants, about 780,000. In the course of the war, Ferdinand was compelled to cede Lusatia to Saxony (1635). Ferdinand III. (1687-1657) brought the war to an end (1648), and, by the peace of Westphalia, ceded Alsace to France. Ferdinand's son, Leopold I. (1657-1705), a mere instrument of the Jesuits, pushed, by his misrule, the Hungarians into alliance with the Turks. In 1683, Kara Mustapha besieged Vienna, which was saved only by the timely arrival of a Polish army, led by John Sobieski. Leopold's armies having reconquered Hungary, it was converted from an elective kingdom into an hereditary one. In 1699, Turkey, defeated in many sanguinary battles by the celebrated general, Prince Eugene, ceded the country between the Danube and Theiss rivers to Austria. Leopold's design to obtain the succession in Spain for his second son, Charles, was frustrated by the diplomacy of Louis XIV. of France. This occasioned a general war (1701-1718), in which England, the Netherlands, Prussia, Portugal, and Savoy, took sides with the emperor against France. Success seemed certain when, by the death of Leopold and of his eldest son Joseph I. (1711), Charles became monarch of Austria. The allies, fearing the preponderance of Austria if the crowns of Spain, Naples, and Germany should be united again, desisted from their efforts against France, and a peace was concluded at Utrecht, by which the Netherlands, Milan, Naples, and Sardinia (exchanged for Sicily in 1720) fell to Austria, while Philip of Anjou, grandson of Louis XIV., was acknowledged as king of Spain. By this treaty the area of Austria was increased to 191,850 square miles. Having

once more waged war with France and Spain, Charles lost Naples, Sicily, and a portion of Milan (1735 and 1739); while a few years later the peace of Belgrade deprived him of nearly all the fruits of Prince Eugene's victories over the Turks. All these sacrifices Charles consented to, principally from a desire to obtain the general recognition of the so-called "pragmatic sanction," by which his daughter, Maria Theresa, was declared the heiress of the Austrian monarchy. Yet, immediately after his death, her right of succession was contested by most of the leading powers, England excepted. Frederic II. of Prussia seized Silesia, the elector of Bavaria (Charles VII.) assumed the title of archduke of Austria, and was elected German emperor (1742). Nothing but the fidelity of the Hungarians saved Maria Theresa. By the peace of Breslau (June 4, 1742) she resigned her claims to Silesia; by that of Aix-la-Chapelle (Oct. 18, 1748) the duchies of Parma, Piacenza, Guastalla, and part of Milan. In the meantime, the emperor Charles VII. had died (1745), and Maria Theresa's husband, Francis I., grand duke of Tuscany, belonging to the ducal family of Lorraine, had been elected German emperor. In order to get Silesia back from Prussia, Maria Theresa conspired with France, Saxony, and Sweden, against King Frederic; but a seven years' war, in which Frederic covered himself with glory, resulted only in the reaffirmation of the *status quo*. Francis, who died in 1765, was succeeded as emperor by his son Joseph II., who, in Austria, acted only as assistant-regent until the death of his mother (1780). During this period Galicia and Lodomeria were taken forcibly from Poland (1772), the Bukovina was obtained from Turkey (1777), and some smaller possessions in Germany, by the peace of Teschen (1779), increasing the Austrian dominions, altogether, to an area of 288,741 square miles. Joseph II., the greatest monarch Austria ever had, endeavored to enlarge and complete the political reforms partly initiated by his mother. Entirely reversing the traditional policy of most of his predecessors, he granted full religious liberty to Protestants, discontinued the censorship of the press, reorganized public education, abolished 900 convents, and crushed the political power of the Catholic clergy, who generally took sides against him. By a vigorous tariff legislation, based upon the protective system, he became the creator, as it were, of Austrian industry. Nothing daunted by the opposition of those who adhered to the old order of things, he pursued his course with unflinching energy. But in this he went rather too far ahead of his people, who were not always able to appreciate his policy. An insurrection arose against him in the Netherlands. In vain he sought to get rid of them, by exchanging them for Bavaria, a project which was frustrated by the efforts of Frederic of Prussia. No less unfortunate in his war against Turkey, Joseph died from grief (or, as some believe, from poison), Feb. 20, 1790. His

brother, Leopold II. (1790-1793), reconciled the Netherlands, made peace with Turkey, and entered into the alliance against revolutionary France. Thus his son Francis (1792-1835) was, immediately on his accession to the throne, drawn into the whirlpool of the revolutionary wars. By the peace of Campo Formio (Oct. 17, 1797) he lost Lombardy and the Netherlands, but obtained, in exchange, a large portion of Venice. Two years before he had obtained Western Galicia, by the third partition of Poland. In 1799, Austria, allied with Russia, declared war against the French republic for the second time, but was compelled by Napoleon Bonaparte to accept the peace of Luneville (Feb. 9, 1801), by which the archduke Ferdinand was deprived of Tuscany, being compensated, though, by Salzburg, Passau, Eichstadt, and the title of prince-elector. The public debt of Austria had, by this time, increased to 1,220 million florins. On Aug. 11, 1804, Francis proclaimed himself hereditary emperor of Austria, uniting all his dominions under the name of Austrian empire. In the next year, having again gone to war with France, he was forced to sign a most ignominious peace at Presburg (Dec. 26, 1805). When, by the organization of the Rhenish league (Rheinbund), under the auspices of Napoleon (July 12, 1806), the integrity of the German empire had been destroyed, Francis laid down the imperial crown of Germany (Aug. 6, 1806). A fourth time he determined upon a war against Napoleon, unaided by any other power, England excepted (1809), but the result was most disastrous. The peace of Vienna (Oct. 14, 1809) took away from Austria some 42,000 square miles of territory, with 3,500,000 inhabitants, and an annual revenue of 11,000,000 florins. Utterly prostrated, Francis did not dare to withhold his consent when Napoleon proposed to marry his daughter Maria Louisa (1810), and in 1812 he even entered into alliance with Napoleon against Russia. But when the Russian campaign had broken Napoleon's power, and Prussia had risen against him, Austria joined in the alliance of England, Russia, Prussia, and Sweden (Sept. 9, 1813), and took a conspicuous part in the overthrow of the French empire. By the peace of Paris (1814) the Lombardo-Venetian kingdom, and all former possessions, returned to Austria. Emperor Francis formed, with Emperor Alexander of Russia and King Frederic William III. of Prussia, the "holy alliance," for the restoration of the old monarchical system, and Vienna became the seat of the congress convoked for the purpose of reconstructing Europe (1815). Since that time, the suppression of liberal ideas and movements throughout Europe appeared to be the principal object of the Austrian government (Prince Metternich). It was Austria which, at the construction of the German *Bund* (replacing the former empire), was foremost in firmly establishing the principle of arbitrary monarchical rule, without any participation of the people; Austrian armies quelled

the popular insurrections in Naples and Piedmont (1822); Austrian diplomacy aided in the suppression of the popular movement in Spain (1823). During the Greek revolution, and the war between Russia and Turkey, Austria, whose interests did not coincide with those of her ally, Russia, avoided, with great dexterity, to commit herself for either party, and succeeded in bringing about the convention of Akerman, the basis of the peace of Adrianople (1829). The insurrections which in Italy followed close upon the French revolution of 1830, were crushed by Austria without difficulty. Although professedly neutral toward the Polish revolution (1831), she disarmed the Poles who had taken refuge on her territory, while a Russian army corps, under the same circumstances, was allowed to continue its operations against the Poles from Austria. Since that time the Austrian policy seemed to be directed more than ever to the war against liberalism. Austria and Metternich became the by-word of political reaction and of absolutism. The death of the emperor Francis, who was succeeded by his son Ferdinand (March 2, 1835), did not effect any change, either in the *personnel* or in the tendencies of Austrian administration. At an interview of Ferdinand with the monarchs of Russia and Prussia the holy alliance was reaffirmed. In the oriental imbroglio of 1840, Austria sided with England. Another revolution in Italy was again suppressed with despotism energy (1844). Thirty years of peace, under the dead weight of absolute despotism, had failed to promote a healthy and progressive development of the resources of the empire. The political machinery, unwieldy as it was, became more and more rotten from year to year. All efforts of the police had been unavailing to keep away the elements of dissatisfaction and of popular indignation. The different nationalities constituting the empire served as a basis of a powerful opposition, and Metternich's policy of keeping them in check, one by the other, began to lose its efficiency. The Polish insurrection at Oracow (which, in consequence, was annexed to Austria, Nov. 1846) communicated itself to the neighboring province of Galicia. Although the government succeeded in quelling it, by instigating the wrath of the peasants against the noblemen, many of whom were massacred in the most barbarous manner, the example given in the easternmost portion of the empire was not lost with the other nationalities. In the Italian provinces the opposition was fostered by the political reforms of Pope Pius IX., and the concessions to popular opinion wrung from the other Italian governments. In Hungary, the former parliamentary opposition of the diet had gradually grown into national enmity, especially so since the death of the governor, Archduke Joseph (1847); similar movements appeared in Bohemia, while even in Austria proper the states insisted upon some participation at least, in the administration of the government. From all these elements a storm

arose, in 1848, which brought the entire Austrian monarchy very near its ruin: On March 13, the people of Vienna rose against the ministry, which made but a feeble show of resistance; Metternich was compelled to resign, and the emperor pledged himself to convoke a congress of representatives of the people, to form a new constitution for the empire. But at the same time the Hungarian diet demanded and obtained an independent constitutional government, leaving merely a dynastic union with Austria. A formidable outbreak at Milan and Venice following close upon the insurrection of Vienna, compelled the Austrian army to retire to Verona.—While thus momentarily successful in the provinces, the revolution created the direst confusion in the centre of the empire, where the conflict between the levelling tendencies of the popular leaders and the incongruity of the masses to be acted upon, destroyed all possibility of a firm and energetic plan of action. Of the revolutionists, some were in favor of uniting those provinces in which the German nationality predominates, to Germany, leaving Hungary to herself, and favoring the union of the Italian states under a national government, while others were unwilling to hazard the position of Austria as one of the great powers, against the vague hope of a reconstruction of Germany. The greatest and indeed the insurmountable difficulty of a political reorganization upon a popular basis, was the want of sympathy among the different nationalities. While the German revolutionists deluded themselves with abstract theories on the fraternal love and *solidarité* of all nations, the Slavic races thought of nothing else but getting rid of the oppressive feeling of inferiority in respect to the German race. With them the overthrow of despotism was but a secondary question; so much so, that they did not hesitate to conspire with the political reactionists against the success of the revolution. In Vienna the ministry of Count Fiquelmont, which had succeeded Metternich, proved its utter incapacity to grapple with the pending difficulties, and very soon the political power fell into the hands of a central committee of the national guard and the students' legion. The emperor, unwilling to resort to extreme measures, fled to Innsbruck (May 17). Another unsuccessful attempt of the ministry to break the power of the students, led to the organization of a committee of vigilance (May 25), which, until the meeting of congress (July 22), exercised an almost unlimited control, compelling the ministry to make room for successors more subservient to the masses (July 8).—When utterly prostrated, even in the very capital, the imperial power began to gather strength in the provinces. A popular outbreak at Prague, was suppressed with great carnage, by Prince Windischgrätz (June 15). In Lombardy, Gen. Radetzky opened an aggressive campaign in June, captured Vicenza, Padua, and other important places, and routed the Sardinian army (the king of

Sardinia having taken sides with the revolted provinces) near Custozza, July 25. Thus Lombardy was subjected again to Austrian military rule, while Venice still held out against it. But a new tempest arose in another direction. The Hungarian ministry (Bathanyi-Kossuth) preparing the way for an independent Magyar kingdom, awakened the fears and national antipathies of the Slavic races, which would necessarily have formed part of this kingdom. Jellachich, the governor (*Ban*) of the Croats, strengthened by the connivance of the imperial court, pronounced against the Hungarian government. The efforts of Archduke Stephen to adjust this conflict, only tended to exasperate the Hungarians, as proving incontrovertibly the collusion of the court and Jellachich. The archduke having returned to Vienna, Count Lemberg was sent to Hungary as imperial commissioner and military commander-in-chief, but he fell as a victim of the infuriated people, on his arrival at Pesth (Sept. 28). Immediately the emperor ordered the dissolution of the Hungarian diet, and appointed Jellachich supreme military commander of Hungary. The diet, denying the authority of the emperor, organized a committee of safety, electing Kossuth president. This, of course, was equal to an open declaration of war. When the garrison of Vienna departed for Hungary, the people of the capital, sympathizing with the Hungarians, rose once more. They took the arsenal, and hung the secretary of war, Count Latour, at the window of his office. Congress, under the pressure of the popular movement, declared itself permanent, and sent an address to the emperor, asking for a new ministry, and the removal of Jellachich. The emperor, who in June, had returned from Innsbruck to Vienna, again fled to Olmutz. The masses at the capital armed themselves under the leadership of Gen. Bem, preparing to resist the impending attack of the army. The garrison, after having retired outside the limits of the city, was joined by Jellachich's horde of Croats, and by the army corps of Prince Windischgrätz. On Oct. 28 they assaulted the city, but the people made a desperate resistance for six days. When, on Oct. 29, the suburbs had been taken by the military, the popular leaders began to talk of surrendering, but the news that a Hungarian army was hastening to relieve Vienna, roused them to a renewal of their efforts. The Hungarians had indeed sent an army of volunteers, but being utterly unorganized and poorly armed, they were routed by Jellachich (Oct. 30). On the next day, the struggle at Vienna came to an end; the city was taken by storm with immense slaughter, and a horrible massacre followed, the savage Croats having been let loose upon the citizens. Martial law was proclaimed, and many of the popular leaders were shot, among others Robert Blum, member of the German national congress, Messenhauser, commander of the national guard, and Hermann Jellinek, editor of the "Radical." The stu-

dents, and other young men who had played a conspicuous part in the revolution, were by thousands enlisted as private soldiers, and sent to Italy, there to be treated as *enfants perdus*. On Nov. 22, a new ministry was formed, of which Prince Felix Schwarzenberg was president. As the energetic measures determined upon by the new administration might have been impeded by the natural good-heartedness of the emperor Ferdinand, he was induced to resign, Dec. 2, 1848, and his nephew, Francis Joseph, a youth of 18 years, whose mother, archduchess Sophia, had been the leading spirit of the counter-revolutionary movement, was called to the throne. The campaign against Hungary was commenced at once. Prince Windischgrätz crossed the Leytha river, defeated the Hungarians near Raab, and a second time, near Babolna (Jan. 1849), occupied Ofen, and pushed the Hungarians to the left bank of the Theiss. But there the operations of the imperial army came to a stand still. During the winter season, Görgey, Klapka, and other military leaders, organized the popular army, and were thus enabled to commence the campaign of 1849 under favorable auspices. Gen. Bem, in Transylvania, defeating the imperial army at Piski (Feb. 9), and the Russians who had been called to help, near Hermannstadt, subjected the whole province to Hungarian rule. The same was done in Croatia by Perczel, (April). The main body of the Hungarians advanced from beyond the Theiss in two columns, defeated the imperialists near Gödöllő (April 7), routed them completely near Waitzen (April 9), again near Nagy Sáro (April 19), and repulsed them from Comorn. Then was the time when the Hungarians might have advanced on Vienna, and overthrown the Austrian monarchy. But the narrow views of the leaders, who declined to take any part in revolutionary movements outside of Hungary, prevailed, and the favorable opportunity was lost. Dissensions arose between the political leader, Kossuth, and the generals, Görgey especially, when the diet adopted a declaration of independence, and Kossuth was appointed president (April 14). Still, even then the war might have been carried on for a long time, if Russian intervention had not been invited by Austria. In June, Prince Paskewitch crossed the Galician frontier at the head of 180,000 men, while at the same time Gen. Panjutin coöperated with Gen. Haynau (who had been appointed supreme commander of the Austrian forces), on the line of the Danube, and Gen. Lüders marched into Transylvania. Although the Hungarians still fought successfully, on several occasions, they could not, for any length of time, hold out against such fearful odds. Repulsed to the left bank of the Theiss, hemmed in on all sides by the enemy, Görgey, to whom the supreme dictatorship had been transferred by Kossuth (Aug. 11), surrendered to the Russians near Vilagos (Aug. 13). Hungary was treated as a conquered country. Haynau, known as the hyena of Brescia, be-

came the hangman of Hungary. All military and parliamentary leaders were shot or hung; torrents of blood were shed, and all prisons crammed with the unhappy victims of imperial revenge.—Simultaneously with these occurrences the war in Italy had been terminated. Within a few days Gen. Radetzky routed the Sardinian army twice, at Mortara (March 21), and Novara (March 23), and obtained a peace by which Sardinia was obliged to reimburse Austria for the expenses of the war (15,000,000 livres). Venice, where an independent republican government had been organized, was invested by Radetzky, and forced to surrender, Aug. 23, 1849. The revolution having been conquered, the Austrian government commenced the arduous task of reorganizing the monarchy upon a firmer basis than before. The congress, which since the final struggle at Vienna had been adjourned to Kremsir, in Moravia, was dissolved (March 4, 1849), and a constitution promulgated by the free will of the emperor, which never went into operation. The efforts of the German national Congress at Frankfort to reconstruct the German empire, excluding Austria from it, were violently opposed by the Austrian government, and the king of Prussia did not dare to defy this opposition by accepting the imperial crown offered by the Frankfort congress. Still, by assuming the leadership of the counter-revolutionary movements in Germany, and aiding the petty princes to put down the people, Prussia obtained a preponderating influence in northern Germany, and made some feeble efforts to centralize the confederacy, all of which were prostrated by the energetic policy of Prince Schwarzenberg. In 1850, the diplomatic conflict between Austria and Prussia seemed to point to a crisis; armies were put in motion—a civil war was anticipated, and a ridiculous fight among some outposts had already taken place near Bronzell in Hesse Cassel (Nov. 8, 1850), when, at the last moment, Prussia submitted to the demands of Austria, and the German diet at Frankfort was reestablished the same as it was before 1848; Austria, on her part, renouncing, for the time being, the idea of entering into the German league with all her possessions. The same energy displayed in the management of the foreign relations was manifested by Prince Schwarzenberg and his ministry in the administration of the internal affairs of the empire. All remnants of the revolutionary period were annihilated, with one exception only, the abolition of soccage. The constitution of 1849 was annulled (Jan. 1, 1852); trial by jury was abolished; the public press crushed down with the utmost severity; the influence of the Catholic clergy and of the Jesuits reestablished. At the same time the government was anxious to reorganize the financial system of the empire. Extraordinary efforts were made to develop the resources of the monarchy by encouraging agriculture, industry, and commerce. A new tariff was adopted (July,

1851), and negotiations were commenced with other German states for the establishment of a complete customs-union with the Zollverein. Prussia, fearing lest her influence might be outweighed by that of Austria, opposed this movement, but several of the Zollverein states took sides against her, and the moment seemed to be near at hand when her objections would have been overborne, when Prince Schwarzenberg's sudden death (April 5, 1852) brought on a change in the policy of Austria. His successor, Count Buol-Schauenstein, declined to press the propositions made by Prince Schwarzenberg, and contented himself with the conclusion of a commercial treaty between Austria and the Zollverein (April 4, 1853). The reconciliation with Prussia was completed at a personal interview of the emperor and King Frederic William IV. Feb. 6, 1853, another popular outbreak occurred at Milan, but was suppressed without difficulty. A diplomatic rupture with Switzerland, where the Italian revolutionists had taken refuge, was the consequence. On Feb. 18, an attempt was made against the emperor's life by a young Hungarian, Libenyi. These events were important only so far as they tended to perpetuate the severe military rule. When, toward the end of 1852, the Montenegrins rose against the Turks, Austria sided with them, and Count Leiningen, who was sent to Constantinople (Feb. 1853), obtained full redress of their complaints. But soon the oriental war surrounded Austria with difficulties of the most serious kind. While the character of her counter-revolutionary policy and gratitude for the aid lent by Russia in 1849, would have seemed to insure at least her tacit coöperation with Czar Nicholas, her government was too keen-sighted to overlook the fact that the interests of Austria lay all on the other side. Yet the dissatisfaction of the subjects scarcely conquered, rendered it impossible to venture into a war, which might give an opportunity for new revolutionary movements. Thus in Nov. 1853, Austria proclaimed her neutrality, and, on April 20, 1854, a treaty was concluded by Austria and Prussia, both pledging themselves to take an active part in the war only whenever the interests of Germany would appear to be endangered. The Russian emperor, indignant at what seemed to him base ingratitude on the part of Austria, endeavored, by flattering the smaller German states, to incite them against Austria, and went even so far as to threaten an appeal to the Slavic races. Thus Austria was forced to change her neutrality, pure and simple, into an armed one. She agreed with Turkey (June 14, 1854) to occupy the Danubian principalities, advanced an army of 300,000 men toward the Polish frontier, and proposed to Russia the four points which afterward became the basis of peace. This proposition having been rejected by the czar, Austria assumed an attitude so threatening that the Russians were obliged to retire from Turkish territory. An Austrian army under Gen. Coronini entered the capital of Wallachia, Sept. 6,

and the war on the Danube was virtually at an end. By promising to the western powers an active support, whenever they would pledge themselves to carry on the war in such a manner as effectually to cripple the Russian power, Austria induced them to determine upon the Crimean expedition. Now, at last, the active coöperation of Austria seemed to be certain; indeed, a treaty to that effect was agreed to by her (Dec. 2, 1854); but in consequence of the want of success of the allied armies before Sebastopol and the unwillingness of the other German powers to accede to the treaty, she again fell back upon her former vague promises, merely offering her good offices to the contending parties. Not even when the Russians once more invaded Turkish territory (Jan. 9, 1855) did she move against them. Plenipotentiaries of the belligerent powers met at Vienna (March, 1855), but were unable to agree upon a basis of peace, and finally adjourned on June 4. During the progress of the negotiations Austria had distinctly pledged herself to go to war if Russia should remain obstinate, and in fact the plan of a campaign in Poland had already been matured at Vienna, when all at once Austria began to reduce her army on the frontier. Financial embarrassments and the cholera, which within a few months destroyed 25,000 soldiers, were the ostensible cause of this unexpected movement, the real cause being probably the assurance given by Russia that in any case she would adhere to those of the four points which involved the special interests of Austria. The western powers began to understand at last that, while they had been trying to use Austria as a cat's paw, they had been used themselves. They became more reserved toward her; nor was their confidence renewed when she again assumed a more decided position after the destruction of Sebastopol. The emperor of the French, who formerly had been anxious to secure the friendship of Austria on any terms, began to look toward Russia, and eagerly seized the first opportunity of concluding peace (1856). Since that time the bad feeling between Austria and Russia continued to increase, and in 1857, the official organs of the Austrian government were ready to assert, that there were no two powers so hostile one to another as Austria and Russia. The strongest proof of this was to be found in the ostentatious sympathy shown on all occasions by despotic Russia for constitutional Sardinia. When, in March, 1857, a diplomatic rupture took place between Austria and Sardinia, the mother of the Russian emperor went to Turin to assure the king of the friendly feelings of the emperor Alexander II. (May, 1857.) During the summer of 1857, a coalition of Russia and France against Austria and England was believed to be the next move upon the chess-board of European politics, and the appointment of an interview between Czar Alexander and Louis Napoleon at Stuttgard (Sept. 1857) went to strengthen this belief. But that interview became a turning point in quite an-

other direction. It showed that the apprehensions of new complications had been founded upon the incorrect supposition that the tendencies and volitions of Alexander II. were identical with those of his father. Alexander, conceiving, contrary to the views of his father, that the real manifest destiny of Russia pointed to the East, declined to make the isolation of Austria the basis of a new system of foreign policy of Russia, and, by meeting, in a friendly spirit, the Austrian emperor (Oct. 1, 1857, at Vienna), neutralized the effect of his interview with the emperor of the French. In consequence, Austria, whose influence had been seriously threatened for some time, regained sufficient strength to successfully oppose the union of the Danubian principalities, contemplated by Louis Napoleon during the time when he, also, shaped his policy with a view to a closer alliance of France and Russia. Freed from all apprehensions in regard to her foreign policy, Austria was once more enabled to turn her attention to her internal affairs. During the oriental war the work of centralization had been carried on by the Austrian government with apparent success. By the concordat with the Holy See, the ratifications of which were exchanged on Sept. 26, 1855, Austria gave back to the Roman Catholic clergy all the privileges and influence which, since the time of Joseph II., had been wrested from them. By stimulating public enterprise and promoting the material interests of all classes of the population, the government was earnestly endeavoring to make the people forget the events of 1848 and 1849. The military rule was somewhat relaxed, and many hundreds of political prisoners were pardoned. At the beginning of 1857, the emperor Francis Joseph made a journey through Lombardy, and in May through Hungary, but the remembrance of past wrongs appeared to be still alive, and the enthusiasm manufactured by the officials could not conceal the fact that both provinces were still far from being reconciled to Austrian rule. The journey, interrupted by the death of a daughter of the emperor, was resumed in August, and the promulgation of a general amnesty for political offences went to prove that the emperor was really intent to close the account of 1848 and 1849; but to all remonstrances against the centralization of the empire and against the generation of a united Austrian nationality, based upon the German element and sustained by religious uniformity, he lent a deaf ear. It was, perhaps, in keeping with these tendencies, that occasionally, though not systematically, the spirit of religious intolerance was suffered to reappear in some provinces, but when (Oct. 28, 1857) an onerous stamp tax was imposed upon the newspaper press, it created general surprise, the public having become accustomed to the belief that on the field of politics at least more liberal counsels would prevail. That measure indeed annihilated at one blow the entire penny-press, which, within the last three or four years, had grown

up exuberantly in proportions entirely unknown out of the United States (as an instance it may be mentioned that one of the Vienna penny-papers, the *Vorstadtszeitung*, had a regular issue of over 40,000 copies); still, injudicious as the measure would appear, it is not improbable that it was decided upon more from financial necessities than from any other cause. In fact, the embarrassments of the national treasury had become so great that every thing was deemed acceptable if at all calculated to replenish the coffers of the government, especially so when the premonitory symptoms of the great financial crisis had destroyed all hopes of raising a new loan in the ordinary way. The outbreak of the crisis, which fell heavily upon the young Austrian commercial enterprise, had, at least, the good effect of compelling the emperor to consent to a reduction of the army. By this means the expenditure for the army was reduced from 145,000,000 to about 95,000,000 florins. In December, 1857, the financial revulsion had spent its power so far in Austria, that the national bank was enabled to loan about \$3,000,000 in silver to the city of Hamburg, a fact which, however, would not seem to deserve the surprise it created, if it is kept in mind, that the bank has an irredeemable circulation of 400,000,000 florins (in 1850, only 879,000,000; in 1845, 214,000,000; in 1835, 151,000,000; in 1830, 112,000,000; in 1820, 52,000,000). With a view to the development of the foreign commerce of Austria, the government strenuously endeavored to overcome the opposition of England to the construction of a ship-canal through the isthmus of Suez, and encouraged the formation of a regular steamship line between Trieste and New York. In January, 1858, another effort was made by Austria to obtain an unrestricted commercial intercourse with the German Zollverein.

AUSTRIA (*Oestreich* or *Oesterreich*), an archduchy, the original nucleus around which the Austrian empire has been formed, has an area of 15,018 sq. m., and a population of 1,902,136. It is bounded N. by Bohemia and Moravia, E. by Hungary, S. by Styria, and W. by Bavaria. By the organic statute of 1849, it was divided into 8 provinces (crown lands), viz., the duchy of Salzburg, Upper Austria (*Oestreich ob der Enns*), and Lower Austria (*Oestreich unter der Enns*). Lower Austria has an area of 7,633 sq. m., and a population of 1,714,608 living in 55 cities, 270 boroughs, and 4,312 villages. Its southern portion belongs to the slope of the Noric Alps, the highest elevation of which is the Snowpeak (6,890 feet). Branches of the principal chain form the Kahlenberge (Bald mountains) or Wienerwald (Viennese forest). The Bohemian forest extends into Austria by several low mountain ranges toward the Danube and March rivers. The principal river of Lower Austria is the Danube, which divides it into two parts nearly equal in size. The tributaries it receives are—on the right bank the Enns, Ips, Erlaf, Traisen, Wien, Schwechat, Piesting, and

Leytha; on the left bank the Krems, Kamp, and March. The most fertile regions are the bottom lands on the Danube. The grape vine is cultivated extensively. Mining is confined to iron, coal, alum, and graphite. The most important cities are: Vienna (the capital of the empire), Wiener Neustadt, Kloster Neuburg, Baden, Bruck, Hainburg, and Krems. In industry and commerce, Lower Austria takes the lead of all other provinces of the empire. Politically, it is divided into 4 circles: Wiener Neustadt, St. Pölten, Krems, and Korneuburg. Upper Austria has an area of 4,616 sq. m., and 755,250 inhabitants in 14 cities, 97 boroughs, and 6,026 villages. It is mountainous throughout. The whole country south of the Danube is covered by the northern range of the Noric or Upper Austrian Alps. Numerous Alpine lakes diversify the face of the country. In agriculture, Upper Austria stands before Lower Austria, but not so in industry and commerce. Extensive salt-mines are worked at Ischel and Hallstadt. Linz is the provincial capital. Linz, Ried, Steyer, and Wels, are the 4 circles into which Upper Austria is divided.

AUTAUGA, a central county of Alabama, bounded by the Alabama river on the south, by the Coosa on the east, and comprising an area of 1,100 square miles. The surface is uneven and the soil of good quality. In 1850 the county produced 12,016 bales of cotton, 492,381 bushels of corn, 181,650 of sweet potatoes, and 75,647 pounds of rice. There were 41 churches, and 710 pupils attending public schools. Capital, Kingston. Pop. in 1850, 15,023, of whom 8,780 were slaves.

AUTENRIETH, JOHANN HEINRICH FERDINAND, a German physician, born at Stuttgart in 1772, died in 1835. In 1797 he was professor of medicine at Tübingen, in 1819 vice-chancellor and in 1822 chancellor of the university. His principal work is a "Manual of Empirical Physiology." He left a number of other medical writings, also an "Essay on Circumcision," with reference to the practice of this ceremony among savages and the Jews. He travelled extensively, visited the United States, and practised at Lancaster, Pa.

AUTEUIL, called AUTEUIL-LES-PARIS, to distinguish it from the Auteuil, near Senlis, in the department of the Oise, is situated near Paris, between Versailles and the Bois de Boulogne, and is a favorite suburban residence of the Parisians, but the village is principally celebrated for the many distinguished persons who have, at various times, resided there. Among these were Molière, Helvétius, D'Aguesseau, Boileau, Chapelle, Condorcet, Franklin, Destutt de Tracy, Rumford, and Henry Heine.

AUTHENTICITY, the character of a historical, or legal writing, or document. The French, or the so-called Napoleonic code, contains a minute definition of the rules, requirements, and formalities established by the law, constituting the authenticity of acts, documents, deeds, of any nature whatever, as drawn

by officers of the law. As the omission of any of the prescribed formalities results in nullifying the force of the document, the law punishes with great severity any such omission or violation committed by an official.

AUTHENTICS, in the *ius civile* or Roman law, the extracts made from the Novellæ, of decisions whose posterior enactment changed wholly or partly previous decisions and definitions contained already in the Pandects or the Codex. To facilitate the understanding of these changes, the glossators of the *ius* prepared a kind of catalogues of such extracts, calling them *ex authentica*, as such was the original title of the Novellæ. These authenticæ are contained in the *corpus juris*, but have no authority. The German emperors, Frederic I. and II. of the Hohenstauffen family, issued in their name authenticæ, and ordered the civilians of Bologna to intercalate them in the code of Justinian. These last authenticæ had a practical authority.

AUTIOHAMP, the name under which many members of the French noble family of Beaumont, have figured in history.—JEAN THERESE LOUIS DE BEAUMONT, MARQUIS D'AUTIOHAMP, born in 1778, died in 1881, took an active part in the 7 years' war. During the revolution he fought for the cause of the royalists, and subsequently entered the Russian service. In 1799 he was sent with a reserve-corps of 30,000 Russians to Switzerland to strengthen Suwaroff's position, but Massena frustrated his plan. After the restoration, Louis XVIII. invested him with the title of count, and appointed him governor of the Louvre.—JOSEPH EULALIE DE BEAUMONT, COMTE D'AUTIOHAMP, step-brother to the preceding, born 1744, died 1829, accompanied La Fayette to the U. S., and in 1788 was appointed commander of St. Domingo. On his return to France he joined the cause of the emigrant royalists, and subsequently withdrew from public life until 1815, when he was appointed governor of St. Germain.—CHARLES DE BEAUMONT, COUNT D'AUTIOHAMP, born 1770, died in 1852, was from 1792 to 1799 one of the royalist leaders in the Vendée, but subsequently he submitted to the authority and entered the service of Napoleon. After the July revolution he attempted an insurrection in the Vendée, for which he was sentenced to death *in contumaciam* in 1837, but was subsequently pardoned.

AUTOBIOGRAPHY. The lives of persons written by themselves have usually been attractive and popular. Combining utility with amusement, autobiography is agreeable reading. To historical and metaphysical students it affords relaxation from laborious investigation, and from intense abstract thought, combined with valuable information in their respective pursuits; while, for the general reader, it unites much of the entertainment of the novel with the satisfaction of seeming to be engaged with an instructive book. The thought of writing memoirs of his own life,

the proper purpose of an autobiography, is either to illustrate the history of the writer's own mind and heart, in order to show how these influenced his life, or to sketch events on which the narrator was well informed, in consequence of having more or less participated in them, or, at least, having had good opportunities of being thoroughly familiar with them. Through the lives of the persons who performed the achievements which history records, the reader often arrives at a knowledge of the causes of events. Autobiography does justice, or attempts to do justice, to the individual who lays open the springs and motives of human action; and, though the book often turns out, like Cibber's, to be "an apology for the life"—slurring over some parts and complacently dwelling upon others—yet, by showing what the writer wishes to appear, it generally conveys a pretty accurate idea of what he actually is. Sometimes, no doubt, a false impression of events and persons may be given, but, for the most part, a man who relates his own life (like a party examined as a witness in his own lawsuit), has his evidence received with a certain allowance for extenuation and exaggeration. St. Augustine, who died near the middle of the 5th century, probably should be received as the first person who wrote what is fairly entitled to the name of autobiography. His "Confessions" take rank, not merely from their literary merit and strong religious feeling, but from their singular frankness. Many centuries elapsed before any other person wrote his own life. The memoirs of Lord Herbert of Oherbury (1581-1648), written by himself, are the earliest instance in the English language, and they remained in manuscript until 1764, when Horace Walpole printed them at his private press at Strawberry Hill. Sully, the celebrated statesman and warrior (1559-1641), so long the friend and minister of Henry IV. of France, also wrote his own memoirs, after the death of his master, and later, as to date of authorship, than those of Lord Herbert, though they treated of events anterior to those recorded by his lordship, who flourished later. It is worthy of notice that (as Julius Cæsar did in his "Commentaries") the duke of Sully, all through his memoirs, speaks of himself in the third person. By far the great majority of autobiographies have been written in French and English. There are a few exceptions, chiefly in German and Italian.—It would be wearisome to enumerate and distinguish all of this class of works. But, taking their authors with a slight classification, the more noticeable may be named. Thus the leading autobiographies, which we know as political, were written by the cardinal de Retz, Bishop Burnet, Lord Clarendon, Bubb Dodington, Lord Malmesbury, Mirabeau, Theobald Wolfe Tone, Archibald Hamilton Rowan, St. Simon, Mirabeau, Fouché, Godoy, Dumouriez, Madame Roland, and the Duchesse d'Abrantès. Napoleon

Bonaparte, while at St. Helena, dictated a great deal illustrative of his own personal actions and motives, as well as of the great political events of his time, and these were recorded, with more or less accuracy, in the works of O'Meara, Las Cases, Montholon, and Gourgaud. Lucien Bonaparte also wrote his own life. There are several autobiographies by military men, the earliest of which was written by Prince Eugene. Some of Napoleon's generals have contributed to this description of books, but comparatively few were written by British soldiers. Of peculiar interest, on account of the gallantry of the narrator, are the personal adventures of Lient. John Shipp (1785-1833), who entered the army as drummer and as sergeant, thrice led the forlorn hope at the siege of Bhurtpoor, and twice rose from the ranks to be a commissioned officer. It was in the army, also, that William Cobbett, so long among the raciest political writers of England, taught himself properly to express his ideas with the pen, and the smatches of personal history scattered throughout his works are strikingly and pleasantly written.—The number of clerical or religious persons who have written their own lives is considerable. John Bunyan, Newton, Whitefield, Wesley, Ellwood, Huntington, Bishop Watson, Jay, Jung-Stilling, Mlle. Klettenberg, Semler, Zschokke, and Adam Clarke, may be particularly noted. With them, perhaps, we should class William Cowper, the poet. Artists have added little to this branch of letters. Benvenuto Cellini has left a singularly interesting memoir of himself. Haydon's autobiography and journals are the latest productions of this class. Martin, Etty, Leslie, and others, in magazines and other periodicals, have given slight sketches of the leading incidents of their public career. Actors and dramatists, on the other hand, have been liberal in their confidences to the public. The "Apology for the Life of Mr. Colley Cibber," one of the earliest of these, has long been a standard classic. Among those who followed are Charlotte Clarke (his daughter), Mrs. Robinson, Madame Clairon, Mrs. Bellamy, Mrs. Inchbald, Mrs. Mowatt, and Grimaldi, the pantomimist. There also are Michael Kelly, the composer, Charles Dibdin, John O'Keefe, Frederic Reynolds, Thomas Holcroft, and Richard Cumberland. Among the scientific men, are James Ferguson, Dr. Priestley, and Hugh Miller. Sir Simon D'Ewes, in the reign of Charles I., an antiquary, has left his "Recollections." Among booksellers and printers, we have Lackington, Dunton, James Hutton, and Benjamin Franklin—who, indeed, may take place also with the authors, men of science, politicians, statesmen, and economists. Even persons of infamous notoriety have written their own lives—among these are Vidocq, the Parisian thief-catcher, James Hardy Vaux, who is self-described as "thief and pickpocket," Madame du Barry, mistress of Louis XV., and Harriette

Wilson, who wound up a career of vice by gibbetting in her memoirs such of her former male acquaintances as refused to pay black mail for her silence. Lola Montez began hers in a Paris newspaper, but we believe the publication was never completed; Lilly, the astrologer, memorable Samuel Pepys, gossiping Horace Walpole, vivacious Sir Jonah Barrington, prison-breaking Trenck, with such eccentrics as Crockett and Wikoff, belong to no peculiar class, but are not to be overlooked; neither can P. T. Barnum's curious confessions. The great mass of autobiographies are the literary. Those of Hume, Gibbon, Voltaire, Marmontel, Alfieri, Kotzebue, Gifford, Samuel Johnson (his is a brief performance, but his *Life* by Boswell, is almost autobiographical), Goethe, Charles Butler, Rousseau, Chateaubriand, Coleridge, Sir Egerton Brydges, De Quincey, Leigh Hunt, Lovell Edgeworth, Jane Porter, Silvio Pellico, William Tennent, Lamartine, Scott, Moore, Southey, Galt, Mary Russell Mitford, Madame de Genlis, the Margravine of Anspach, Sir John Barrow, R. P. Gillies, Madame D'Arblay, and George Sand, are among the most widely known. Byron's memoirs (of which one copy was burned in 1824) have not yet been published. Guizot, the literary statesman, is preparing memoirs of his own times, and Béranger's autobiography was published in Jan. 1858, shortly after his death. Lockhart is said to have left the manuscript of his own life, and Lady Morgan is engaged on a similar work. The Duke of Wellington's *Memoirs* by himself (which he described in a letter to Napier, the historian), will probably be published ere long, and Talleyrand's autobiography, delayed by his own desire, will soon appear. Godwin, Bulwer Lytton, William Carleton (the Irish novelist), Thomas Hood, and others, have introduced small and isolated portions of their personal history into the introductions or prefaces to collected editions of their works. We have to add, that the number of American autobiographies is very limited. At their head, however, stands Franklin's *Life*, and it is to be lamented that though he wrote part of it as late as 1788, it concludes with his arrival in England, in 1757—thus leaving his last 33 years wholly unnoted. Scott, Southey, Moore, and others, who commenced autobiographies, did not carry them on much beyond the commencement of active manhood. In a letter from Southey (unpublished), he endeavors to account for this by stating that the impressions of childhood and youth are pleasant, and we love to record them—but when the cares and struggles of life have annoyed us, we shun the pain of recalling and recording them.

AUTOCHTHONES (Gr. *avros* and *χθων*, from the very earth). It was an idea with many of the Greek communities that they were so very aboriginal as to have sprung from the soil on which they then lived. The Arcadians and Athenians made this pretension, and called themselves autochthones. This was

in opposition to the Dorians of the Peloponnese, who were immigrants.

AUTOCRAT (Gr. *avros*, self, and *κρατος*, to govern), a sovereign ruling over a country and its inhabitants with limitless power, embodying in his single person the legislative, executive, and administrative authority, delegating it to his agents and officials as he judges proper. The Asiatic nations have been subject from time immemorial to this system of government. The abstract definition of its principle and nature, to use legal terms, is, that the sovereign alone is and has the rights of a person, and that in relation to him all the rest of the inhabitants, his family not excepted, are things without rights. In Europe the sovereigns of Russia alone are autocrats, although Louis XIV. ruled for a time with something like autocratic power. During the suzerainty of the Tartars over Russia, from the 18th to the end of the 15th century, the autocratic power took root and was developed to perfection. One of the conceptions of autocracy was that the living sovereign could appoint his successor, and make a gift of his state to anybody at his choice or whim, without being bound by the right of blood or of direct inheritance. This conception, however, was annulled, first by a ukase of Paul I., and subsequently the right of succession to the throne became firmly established and was defined by Nicholas I. and Alexander II. The 8 last Russian autocrats, Alexander I., Nicholas, Alexander II, at their coronation declared that they should rule according to laws. But as they are in principle the living law, they can abrogate, repeal, annihilate, change, any preëxisting statute, and substitute for it another. This being the emanation of their individual, unlimited will, the respect paid by them to any preëxisting law is in principle only a matter of their own pleasure. Such is the abstract absolute theory of the power of an autocrat. But in practice, even under the most absolute rule, certain rights which are constitutive of, and innate in, human society, are respected. These form a kind of common law, embodied in customs, notions, and established usages; against them the will of the autocrat is generally powerless. Such are the individual, family, and property rights of the subject, that of the established religion, and the like. The violation of such rights has sometimes been attempted, but has generally proved unsuccessful in the long run, and fatal to the violators. Few autocrats, therefore, have ever been able to exercise their power quietly in the fullest and most limitless comprehension. History also proves that autocrats are generally influenced by persons by whom they are immediately surrounded, and act as they are incited by their favorites, councillors, or courtiers, much more than sovereigns ruling under the restrictions of positive laws, or independent legislative and judicial bodies.

AUTO-DA-FE (a Portuguese phrase signifying act of faith; Span., *auto-de-fé*), a public day

held by the inquisition for the punishment of heretics, and the absolution of the innocent accused. The term is also applied to the sentence of the inquisition read to the condemned just before execution, and to the session of the court of inquisition. See INQUISITION.

AUTOGRAPH (Gr. *autos*, self, and *γραφη*, writing). As the derivation denotes, an autograph is writing executed by a person's own hand. Long since it acquired a more general meaning, and is now understood as a manuscript executed by some one who, from station, action, intelligence, or notoriety, has obtained some reputation, whether good or bad. A numerous and generally very intelligent body, scattered all over the civilized portions of the world, bear the name, from what they apply themselves to, of autograph collectors. From almost the earliest times when any thing like the modern system of chirography became common, collections of autographs have been made in Europe. As a matter of course, diplomatic correspondence has been very well preserved among the archives of many states. The private letters of ambassadors and statesmen have also been well taken care of, and are retained, in numerous instances, by their descendants. The correspondence of illustrious commanders, of royalty, of authors, of artists, of lawyers, of medical men, of men of science and philosophy, and of divines, has been respected much more than might have been expected, from the want of what is called clerical learning in the later days of mediæval history. Autograph collections cannot be said to have commenced before the 16th century, though earlier signatures of royal and other personages have been preserved, and Magna Charta, the original of which is in the British museum in London, granted as early as 1215, shows that neither King John, nor, with scarcely an exception, his nobles, could write their own names. The clergy were the learned men of that period; and down to a much later date, so uncommon, then, was the art, that in numerous cases, on conviction for crimes less than capital, the culprit was liberated without punishment, for a first offence, on showing that he could even read. Hence the legal action called "benefit of clergy," which remained as part of the common law of England until a few years ago, when, like "trial by battle," and "burning on the hand," it was absolutely repealed. A writer in "Notes and Queries" says that collections of autographs had their origin in Germany about the middle of the 16th century, "where travellers carried with them white paper books to obtain the signatures of eminent persons, or of new acquaintances. Such a book was called an album, *hortus amicorum*, or *thesaurus amicorum*. The oldest in the British museum is dated 1578, and appears to have belonged to a lady."—The elder D'Israeli, in his "Curiosities of Literature," enlarges upon a subject which Oldys, the antiquary, had noticed long before—the

distinctness of character in the handwriting of several of the British sovereigns. Many persons, it should be added, have collected and studied autographs, with a view of judging of the natural character by the writing. It cannot be doubted that, in many instances, the temperament will influence the writing. Impulse certainly has something to do with impressing into the signature something of the character of the writer's mind. On the other hand, particular training will interfere to prevent this. There is no character in the writing of Sir Walter Scott or Henry Mackenzie—both having had their hands severely disciplined in youth, by copying law papers. Thomas Moore and Robert Southey each wrote with minute attention to elegance of appearance, the elaboration of their compositions being carried into their writing itself. Thomas Campbell's poetry, wrought out with much care, is illustrated by the pains which he devoted to his manuscript. Samuel Rogers, who corrected until the polish nearly wore out the thought, wrote with all the care of a schoolmaster setting a copy for his pupils. The dash and spirit of Byron's poetry seem to have been infused even into his handwriting. Wordsworth shows inequality and homeliness. Cobbett wrote a hand as clear and impressive as his own argument. Lockhart's rapid writing would seem to indicate equal rapidity of thought. The writing of 8 English chancellors, who came in direct succession, illustrates the idea of character. Lord Eldon, slow and sure, wrote a careful and well-formed hand. Lord Lyndhurst, fitful in his industry, ever willing to avoid severe labor, and able to accomplish whatever he applied himself to, writes in a careless manner, leaving every letter legible, however hastily traced. Lord Brougham's vigorous mind strongly stamped itself upon his autograph, which is unlike any other. Among Americans, the simple, and well-known signature of George Washington, singularly shows native dignity, force of character, and unconquerable firmness. So, among military commanders, the autographs of William III. and the late duke of Wellington, which much resemble each other in mere form of the letters, are alike also in the expression of *hauteur* and command. Some writing, like that of Dr. Chalmers, is almost an illegible scrawl. For the most part, the leading British statesmen are good penmen. There is as marked a contrast in the tall and formal signature of William Pitt, and the careless ease of Charles James Fox's, as there was between the men themselves. Canning, Grey, Melbourne, Peel, and Palmerston, have large and plain signatures, with graceful curves—as might be expected from cultivated minds, which, amid the perplexity of politics, still delighted to recur to letters and to art. The Tudor race of British monarchs wrote boldly and legibly. The Stuarts, with the exception of James II., were careless; his was a large, plain hand, indicative of phlegm and obstinacy. The present royal

family of England have usually written well. George I. had a well-formed, but stiff sign manual. That of George II. resembled it in form, but was a trifle less firm. George III. wrote an old-fashioned, free, and handsomely-formed hand. George IV. had a magnificent signature. The whole George R. was composed of tall, peacock letters, written in one word without once lifting the pen from the paper. A tory writer in *Blackwood's Magazine*, enthusiastic on this point, said: "There is about the whole effect something eminently graceful, composed, and princely—and that, compared with the hideous ragamuffin Napoleon of the late emperor of France, shows, in the most striking manner, what a difference there is between the uneasy strut of a usurper, and the calm majesty of a born king." The signature of William IV. was large, flourishing, and feeble, though pretensions. Queen Victoria writes a large, straggling hand, but her signature is beautifully formed, with each letter clearly cut, and unquestioned grace breathing through the whole. In marked contrast are the signatures of the three Napoleons; the first was a mere scrawl, and he rarely wrote all the letters of any word, so impatient was he to put his thoughts upon the paper. His son (the Duc de Reichstadt) wrote a large, fair, handsome hand—not unlike that of Louis Philippe. His nephew, the present emperor, writes better than most Frenchmen. He has a neat, running hand, very legible, evidently written with rapidity and ease, and the signature terminating in a close flourish. Of all signatures, the most valued, and among the most rare, is that of Shakespeare. His name is thrice signed to his last will and testament, deposited at Doctors' commons, in the city of London. These signatures do not greatly resemble each other, though they must have been made at the same time, if not actually with the same pen, but are genuine, beyond all doubt. His signature is also attached to two parchment deeds, one in the library of the city of London and the other in the hands of a private gentleman near London. One of these is the conveyance of property purchased by Shakespeare, on the Blackfriars, London, and the other a deed of mortgage upon this said property, executed the day after he had bought it. These 5 signatures must be authentic. Another, assumed to be Shakespeare's own, is to be seen on the fly-leaf of a book in the British museum, the authenticity of which rests entirely upon its similarity to the known signatures, for there is no proof, nor even tradition, that the volume ever was in Shakespeare's hands. The collection of autographs in the British museum, composed of many valuable collections, bequeathed to or purchased for that national institution, is the most complete and extensive in the world. The Cottonian, Harleian, and Sloane manuscripts, would of themselves almost merit this praise, but these formed but the nucleus, and every year sees the number increase. They are open to all, and, as mate-

rials for history, have been found of great value. Almost every capital in Europe has a national collection of autographs,—the most valuable being at Rome, Madrid, Paris, and Vienna. The archives at Washington, which contain the declaration of independence, are full of increasing interest. The number of private collections is considerable, and much expense has sometimes been incurred in illustrating them. It may be stated that those who ride the hobby of collecting autographs generally do it with a higher purpose than mere curiosity. Whatever the original inducement, whenever the pursuit ripens into a passion, augmented knowledge, historical as well as biographical, is the result. A genuine collector is not satisfied with an autograph until he obtains as much information as possible concerning the writer. Very frequently the letter or document itself contains something which illustrates a doubtful point of history, or throws light upon an obscure passage of biography. The largest private collection of modern times, in England, was that formed by the late William Upcott, of London. Upon his death it was sold by auction, and dispersed. Sir Richard Phillips was a great collector, and claimed to be the first of the tribe. "It is certain," says Catharine Hutton, "that he was in possession of reams of these precious relics, each arranged by the alphabetical name of the writer. He was so well aware of their value, at a time when they were little thought of by others, that he has been heard to say he would as soon part with a tooth as a letter of Colley Cibber's; and that he expected a grant of land in America for a manuscript of Washington's." There is another good collection in London, the property of Mr. Donnedieu, a Frenchman. Mr. Robert Cole, also of London, has a splendid collection,—probably the largest in England, though he may be challenged by Mr. Dawson Turner, of Great Yarmouth (surviving brother of the late Sharon Turner, the Anglo-Saxon historian), and the Rev. Dr. Raffles, of Liverpool. These gentlemen have collections, each worth many thousand pounds, and the arrangement of their treasures is at once simple and complete. In Scotland, where autograph collectors are numerous, an Edinburgh bookseller, Mr. W. F. Watson, is confessedly the most successful and enterprising. Though a great portion of his treasures were obtained by exchange and gift, he has expended £15,000 on the purchase of rare autographs, and costly portraits, views, maps, and title-pages to illustrate them. In the United States, perhaps, the most extensive collection has been formed by the Rev. Dr. William B. Sprague, of Albany. In 1828 he commenced his collection, and, much about the same time, Mr. Gilmor, of Baltimore, entered upon the same field. Mr. Gilmor's collection, which was very fine, has been much increased by Mr. Dreer, of Philadelphia, who purchased it. Other eminent autograph collectors are Mr. Tefft of Savannah, Mr. Cist of Cincinnati

(believed to reside now in St. Louis), Mr. Keeler of Mississippi, Mrs. Zachariah Allen of Providence, Mrs. T. A. Green and Miss Arnold of New Bedford, the Rev. Mr. Waterman of Boston, and Dr. Shelton Mackenzie (chiefly of modern European celebrities) now of Philadelphia. Mr. Charles B. Norton, of New York, has probably the largest public collection of autograph letters in this country. For the information of collectors, who abound in the United States, we may mention that Dr. Sprague's mode of arrangement is twofold,—one alphabetical, the other according to subjects, and one being to a great extent a duplicate of the other. He possesses (what is extremely rare) complete sets of the signers of the American declaration of independence, framers of the constitution, generals of the revolution, and, with a very few exceptions, of the members of the old congress. Autograph collectors ought to be held in esteem, as often saving from oblivion or destruction many documents of great value. The original of Magna Charta, now in London, was actually in a tailor's hands, for the purpose of being cut up into parchment measures, when it was rescued by an antiquary who fortunately knew its value, and preserved as an object of national interest and importance.

AUTOLYOUS. I. A mythological character of ancient Hellas, son of Hermes and Chione, father of Anticlea, and thus maternal grandfather of Ulysses. He was an incorrigible thief and liar. His robber's lair was Mt. Parnassus. He stole a flock of sheep from Sisyphus, but their owner had taken the precaution to earmark his sheep and he got them back again. He broke into Amyntor's house and stole his armor. II. Of Pitane in Æolia, the earliest of the Greek writers on the sphere, lived about 840 B. C.

AUTOMATON (Gr. *autos*, self, and *mao*, to move), self-moving machines, or those which have within themselves the moving power. This description would make the term applicable to watches, musical boxes, &c., but it is generally used to designate only those machines which are made to imitate the motions of men and animals. Those constructed to imitate men are sometimes called *androides*, from the Greek words, meaning like a man. In ancient times, before the real value and true purpose of mechanical ingenuity were understood, this, when most highly developed, appears to have taken the direction of imitating the forms and actions of animals, rather than of adding to the convenience, or reducing the labor, of mankind; and down even to the present time there are frequent instances of the same misapplication of talent. Probably the earliest allusion to self-moving machines in history is to the tripods moved on living wheels, and instinct with life, which Homer describes Vulcan as having contrived. Then come the walking statues, female dancers, and wooden cow of Dædalus, whose invention appears to have been wonder-

fully prolific in automata; and also the colossal statues of Memnon, the remains of which are still to be seen at Thebes in the ruins of the Memnonium. These uttered joyful sounds at the rising of the sun, but mournful ones when it set, and continued to do this for hundreds of years, even to the 4th century of the Christian era. Archytas constructed his wonderful dove 400 years before Christ. In later times we have Friar Bacon's brazen head, which spoke, and the eagle and iron fly of Regiomontanus, the former of which is said to have flown from the city, saluted the emperor, and returned; and the latter after flying round the room returned to its master. But the love of the marvellous has no doubt greatly improved upon the feats of the earlier inventors. The first *androides* which acquired any celebrity was made by Albertus Magnus, in the 13th century. It moved like a man and even spoke. Thomas Aquinas is said to have been so alarmed by it, that he broke it in pieces with his staff, to the great grief of the unfortunate inventor, who could only exclaim—*Periit opus triginta annorum*—alas, you have destroyed the work of 30 years. Another similar invention of Descartes, which he named his daughter Francina, shared a similar fate; the captain of a vessel on board of which it was placed, thinking the devil must be in a machine that moved so like a human being, had it thrown overboard. Charlemagne received from Haroun al Rashid a present of a water clock, in the dial of which a door opened at each hour, and when at noon the 12 doors were all thrown open, as many knights on horseback issued out, paraded round the dial, and then returning shut themselves in again. A very amusing automaton group was constructed by M. Comus, for Louis XIV., consisting of a coach and horses, coachman, a page, and a lady inside. The figures all performed their appropriate parts; the coach was driven up to the king and stopped, and the lady, let out by the page, presented a petition, and reëntering the carriage was driven off. Next to Dædalus, Vaucanson, who lived in Paris the early part of the last century, appears to have been possessed of the greatest skill in this department. He exhibited in Paris in 1738 a flageolet and tambourine player, which is probably the most perfect *androides* ever constructed, as his duck is no doubt the most perfect automaton. It played the flageolet with the left hand and beat the tambourine with the right, executing many pieces of music with wonderful accuracy. He also exhibited a duck in 1741, which moved, eat, drank, and even digested and evacuated its food like a live duck. The materials taken into the stomach were not ground up, but dissolved. The figure would stretch out its neck to take food from the hand, and then would swallow it with the natural avidity of a duck; even the motion of the muscles of the neck being perceptible. It would rise up on its feet, walk, swim, dabble in the water, and quack, wonderfully imitating the natural actions of the

duck. In its mechanism it was constructed in many parts—as in the wings—as nearly like those parts of the bird as possible. Vaucanson undertook, near the close of his life, to construct an automaton, which would display all the mechanism of the circulation of the blood, the veins and arteries in which were to be of gum-elastic; but the art of working this material was not then well understood, and there being long delay in the arrival of an anatomist sent by Louis XIV. to attend to the work, Vaucanson became discouraged and gave it up. The father and son, named Droz, had the same remarkable talent. The former made a figure of a child, which sits at a desk, dips its pen in the ink, and writes in French whatever is dictated. The latter, born in 1752, went to Paris at the age of 22, taking a female figure he had made, which played different tunes on the harpsichord, following with her eyes and head the notes in the music book, and rising at the close and saluting the company. Vaucanson, seeing some artificial hands he had made for a young man who had lost his own, said to him, “Young man, you begin where I should be willing to end.” About the same time the abbé Mical made a number of automaton figures, some in a group, which played different instruments of music. He also exhibited at the academy of sciences two heads, which articulated syllables. Maelzel in the early part of the present century exhibited a famous automaton trumpeter at Vienna, which played many of the French and Austrian marches. Still later is the automaton of the ingenious Swiss mechanic, Maillardet, a female figure that performs 18 tunes on the piano—with the natural movements of the fingers and eyes and heaving of the bosom. It continues in action for an hour: with it are an automaton magician; a boy that writes and draws; a little dancing figure, that moves to music from the glass case it is in; a humming bird, that comes out of a box, sings and returns; a steel spider; and a hissing serpent. The famous automaton chess-player is an ingenious piece of mechanism, but there is no doubt it was constructed to contain a small person, by whose intelligence the movements were controlled and the game played. The doors of the machine were opened apparently to expose the whole interior; but they were never all opened at the same time. A small person could thus move from one part of the interior to another, keeping himself concealed. Such a one, known to be a skilful chess-player, travelled with the exhibition, and was never seen during the continuance of the game.

AUTONOMY (Gr. *autos* *nomos*, a law to itself), an expression which belongs to the philosophy of Kant. When this philosopher affirms the autonomy of the reason, he means that in reference to morals the reason is sovereign; that the laws imposed by it upon our will are universal and absolute; that man finding such laws within himself becomes in some sort his own legislator and a law to himself. It is in this

property of our nature, that is, in the sovereignty of duty, that Kant makes the true character of the liberty of the will to consist. On the contrary, he calls by the name of *heteronomy*, the laws which we receive from nature, the violence which our passions and desires exercise upon us.

AUTOPLASTY, a surgical operation by which the nose or other superficial portion of the body, being destroyed by accident or by disease, may be renewed or replaced by a portion of skin taken from another part of the same body. This art is said to have been practised in India from time immemorial. It was a custom to punish crime by cutting off the nose, or the lips, or the ears of the criminal; and for a time the parts were immediately replaced and found to grow again. To prevent this the excised parts were destroyed by fire; but the fact of the natural part adhering after it had been excised, and healing as a common wound, suggested the idea that a portion of skin removed from any other portion of the body, and applied immediately to the mutilated part, might heal and become a natural substitute for the part removed. When the nose was cut off by the executioner, the surgeon cut a triangular portion of skin from the forehead, leaving it still attached by a small pedicle over the root of the nose, and, twisting it round, reversed it over the nasal region to supply the place of the nose which had been cut off. The skin adhered and the deformity was lessened, but a scar remained upon the forehead where the skin had been removed. This method was adopted in other countries, where the nose, the eyelids, or any portion of the face, had been injured by accident or by disease. Celsus speaks of nasal and labial autoplasty. In the 15th century this art was practised in Calabria by the Branca family of surgeons, who introduced the practice of taking a portion of skin from the arm to replace a deformity in the face, instead of turning over a piece of skin from the immediate neighborhood of the part repaired, leaving a scar close by almost as bad as the original deformity. In the following century Lanfranc, an Italian surgeon, practised the art of nasal autoplasty with success in Paris; and the celebrated Gaspard Tagliacozzo practised the same art in Italy, and wrote his work on the art of autoplasmic surgery, which is still in good repute. In the beginning of the present century this art, but little practised, and almost abandoned, was revived by the celebrated English surgeon Carpine, and has been much improved by Groefe, Dzondi, Delpech, Cooper, Dupuytren, Roux, Lisfranc, Blandin, Velpeau, Lallemand, Dieffenbach, and other celebrated surgeons of the present time. New methods have been introduced, and almost any superficial portion of the body may be now repaired by autoplasmic surgery. Three methods are adopted, the Indian, the Italian, and the French, and one or the other is preferred according to the parts involved. The Indian method, already described, consists in turning

over a contiguous portion of skin to repair the deformity; the Italian method consists in taking a portion of skin from the arm, or from a distant portion of the body, to repair the injury; the French method consists in loosening the skin on either side of the injury, so as to detach it from the parts beneath, drawing it together until it covers the lost part, and then uniting the borders by suture pins and ligatures, until the parts adhere and grow together. This is far the best wherever it is practicable.—The resources of this art are now very considerable, but skill is required to operate well, and judgment to decide when practically useful; for, where the general health of the patient is unfavorable, the operation may be unadvisable.—Different names are given to the operation, according to the parts repaired by this method: it is termed "blepharoplasty" when applied to the eyelids; "otoplasty" when applied to the ears; "rhinoplasty" when applied to the nose; "cheiloplasty" in reference to the lips; "genioplasty" in reference to the cheeks; "keratoplasty" in reference to the cornea; "palatoplasty" for the roof of the mouth; "staphyloplasty" for the velum palati; and "bronchoplasty" for the larynx.

AUTOPSY (Gr. *autos*, self, and *opsis*, vision, signifying to see for oneself). The term is applied to a methodical inspection of the corpse, in order to discover the cause of the disease which terminated fatally. Necroscopy would, perhaps, be a more appropriate term, but autopsy is the word commonly used. The art of post-mortem examination is at once the result and the means of obtaining a correct knowledge of normal and pathological anatomy, as a basis for surgical and medical art and science. It is also useful in determining the cause of death, where legal proceedings are involved. Infanticide, suicide, and various kinds of homicide, can only be detected, in some cases, by a post-mortem inspection of the corpse; and many legal points require the nicest discrimination of facts connected with such cases to guide the magistrates in their decisions with regard to innocence or guilt in persons implicated by suspicion.—Autopsy is either authorized by the family of the defunct, who wish to know the nature and extent of the disease which caused death; or by the magistrates, to ascertain the cause of death, where mystery and suspicion call upon the law to interfere. In the former case, autopsy is generally performed before inhumation, but in the latter sometimes after disinterment.—In ordinary post-mortem examinations the external skin is carefully divided in the central line of the chest, or the abdomen, the subcutaneous parts are separated to allow inspection of the internal organs; and when that is done, the parts are carefully replaced, the skin sewed up, and no disfigurement remains. There is nothing revolting or unsightly, therefore, in the operation, and the information gained is of great importance to legal decisions, on the one hand, and to the science of pathology and medicine on the other.

AUTUMN (Lat. *autumnus*), the third season of the year, in the northern temperate zone begins when the sun, in its apparent descent to the southern hemisphere, crosses the equatorial line; and ends at the period of the sun's greatest southern declination, or when he enters Capricorn. This astronomical autumn begins about Sept. 23, and lasts till about Dec. 21, but in popular language in this country autumn comprises the months of September, October, and November. In the southern hemisphere, the autumn takes place at the time of our spring.

AUTUN, the chief town of a district in the department of Saône and Loire, France. It is pleasantly situated at the foot of a range of well-wooded hills: the surrounding country is rich in vineyards and cornfields. The town contains many antiquities. Massive and curious fragments of the ancient Roman walls still stand; also, the so-called temple of Janus, of imposing proportions and solidity. Beside these there are 2 curious Roman gates, the remains of an amphitheatre, and just without the gate a pyramidal mass of architecture, built probably for sepulchral purposes, but in whose honor antiquarians are in doubt. The town contains several fine specimens of church architecture, among them the cathedral of St. Lazare, Romanesque in style, and the Chapelle St. Nazaire, interesting for its richly painted glass. Near Autun are the valuable coal basins of Epinac and Creuzot. The episcopal see of this city was once held by Talleyrand. Pop. in 1853, 11,997.

AUVERGNE, an ancient province of France, now comprised in the departments of Cantal, Haute-Loire, and Puy-de-Dôme. It is divided into two parts, very different in their climate and productions. Upper Auvergne, which includes chiefly the departments of Cantal and Puy de Dôme, is mountainous, wild, and picturesque, and has no other riches than the fine pasturages upon which cattle are raised. The mountains which intersect it on a branch of the Cevennes, and lie in confused groups, sending up several summits to the height of 6,000 feet, some of which are extinct volcanoes. Mount d'Or, the highest of them, is an almost isolated cone, and has its sides covered with scorias. Lower Auvergne extends along both banks of the Allier, and presents a continual succession of towns and villages, and of the most fertile hills and valleys of France, which produce abundantly the vine, grains, and fruits. Auvergne was the native province of Gregory of Tours, De l'Hôpital, Pascal, Turenne, Delille, Desair, and other distinguished Frenchmen.

AUXERRE, a city of France situated on the left bank of the Yonne, capital of the department of the same name. Its wines are much esteemed. Its manufactures are calicoes, cloths, serges, druggets, earthenware, violin strings, &c. It has a college, a secondary ecclesiastical school, a museum of antiquities, a public library of 24,000 volumes, a cathedral with fine flamboyant-gothic façade, and the quaint church

of St. Germain, with curious crypts, in which lie buried the counts of Auxerre. The streets are crooked, and the city ill-built. Pop. in 1852, 14,166.

AUXONNE, a town of France, department of Cote d'Or, on the left bank of the Saône, 17 miles south-east of Dijon. It has an arsenal, barracks, and magazines, with manufactures of woollen cloth and nails. Pop. in 1852, 6,265.

AUZOUT, ADRIEN, a French mathematician and astronomer, born at Rouen at the beginning of the 17th century, died at Rome, in 1690, celebrated for having, in conjunction with Picard, applied the telescope to the mural quadrant. He also invented and applied to the telescope a movable wire micrometer, on which he published a treatise, in 1667. Picard assisted him in perfecting this instrument. Among other results of the micrometer, he observed and measured the diurnal variation of the moon's diameter, first explained by Kepler. Auzout was an efficient optician and maker of telescopes. His observation and calculations of the comet of 1664, suggested to Louis XIV. the first idea of founding an observatory at Paris, and he was one of the original members of the academy of sciences, founded in 1666.

AUZOUX, LOUIS, a French physician, born at St. Aubin d'Ecrœville, in the department of the Eure; celebrated for the invention and perfection of a new art of imitating anatomical preparations, which new art is technically called *clastique*, in French. In 1823, the faculty of medicine was reorganized by the Bourbon government, in conformity with their desire to bring back a more religious tone of feeling in the country, and to set aside the spirit of philosophy which had brought about the revolution, and supplanted Roman Catholic discipline in the schools and universities of France. In the same year, the schools of medicine were also reorganized on the old system, and prejudices were revived against dissection, as it was believed that science generated scepticism in the human mind, and natural science more than any other; but most of all, a knowledge of the human body, and the animal economy. This made it difficult to prosecute dissection in the medical schools, and anatomical preparations were in great demand as an indispensable substitute. These were either very bad, or very scarce and very dear; and, under these new difficulties of state policy, Auzoux conceived the idea of imitating anatomical preparations artificially, by making a soft pulpy substance of papier-maché, which might be run into moulds, while in the liquid state, and be removed when dry, as plaster of Paris casts are; but without being easily broken or damaged by falls. In 1825 the invention was completed; in 1830, it was perfect; and at the present time Auzoux has a manufactory established at St. Aubin, in which he employs from 60 to 80 persons constantly, in moulding, painting, labelling, and constructing manikins, in imitation of the human body and all its organs; and also, the

bodies and internal organs of animals and insects. See ANATOMICAL PREPARATIONS.

AVA, KINGDOM OF. See BURMAH.

AVA, the capital city of the Burman empire; it is styled, in the official documents of the country, *Ratanapura*, a Pali word signifying city of gems. The true Burmese name of the city is *Ang-wa*, meaning a fish-pond, because the original town was built around one. This word has been corrupted by Asiatic strangers into *Awa*, and thence by the English into Ava. The city is built on an island, formed by the Irrawaddy river on the N., which is here 3,282 feet broad—the Myit-nga on the E., a rapid stream flowing into the Irrawaddy under the very walls of the city—the deep and rapid torrent of the Myit-tha on the S., an offset of the Myit-nga—and, on the S. E. angle, a canal, through which the waters of the Myit-nga flow, dug to defend that face of the city. Ava is divided into upper and lower, or inner and outer towns. Exclusive of suburbs, the whole place is about $5\frac{1}{2}$ miles in circumference, and is enclosed with a brick wall $15\frac{1}{2}$ feet high and 10 feet thick; an embankment of earth supports this wall on the inner side at an angle of 45° , and there is an apology for a ditch on the outside; the wall itself is kept in no repair. The inner town, or city proper, includes the palaces, royal pagodas, and other public buildings, among which are the arsenal and hall of justice. This, the government quarter, is surrounded by a well-built and well-kept wall 20 feet high; and the wall, in its turn, is defended by a strong teak stockade of the same height; for the people of Ava are much addicted to angry risings and royal assassinations. The population is constantly fluctuating, by reason of changes in the government, removals of the capital, foreign wars, and domestic discords; but it will generally be found rising and falling between 80,000 and 50,000. From the same causes results the temporary character of the houses.—The appearance of Ava, like that of all Burman towns, is picturesque, and, by its gilded pagodas and carved monasteries, somewhat imposing when regarded from a distance. But on a nearer view the houses of the outer town are found to be, for the most part, wretched huts, built of bamboos and mats, and thatched with a kind of long, coarse grass; no nails are used in their construction, and they are ready to be struck, like tents, and removed at a moment's notice. They are invariably raised a few feet from the ground, to allow free passage for the water after heavy rains; at the same time shelter is afforded to great numbers of pigs, ducks, and pariah dogs. The residences of the chiefs and wealthy men are generally constructed of planks, and tiled. Brick houses are allowed to foreigners only, and the few to be seen present a grim and prison-like appearance. Bricks and mortar are prohibited to natives, for fear that they will fortify themselves against the government. The king's pagoda at Ava is superior to most Burman temples; but

it is said to have been built by a Hindoo architect, from Madras. It is surrounded by a covered gallery, the outer walls of which are adorned with rude pictures, representing the birth, adventures, and death of Gaudama, beside scenes in the Buddhist heaven and hell. Ava contains 11 bazaars, or market-places, composed of thatched huts or sheds, wherein, however, all sorts of commodities, from the meanest to the most costly, are exposed for sale: silk cloths, the finest of which are made in Ava, from raw Chinese silk; common coarse earthenware, unglazed, but of excellent quality, made in the city; porcelain from China; fine steel goods from Bengal; gold and silver ornaments of native manufacture, very clumsy; images of Gaudama, of the native marble which Sir F. Chantrey declared was equal to the marble of Carrara; rubies from neighboring brooks, of which, however, the king claims for his own behoof all that exceed a certain value; amber from native mines; petroleum from the famous wells of the upper country; and quicksilver, vermilion, verdigris, dried fruits, paper, umbrellas, and wrought copper from China.—Through the streets of Ava the docile and well-broken buffaloes and oxen of the country pass and reposs continually, with carts and packs; the tough but stubborn ponies of Pegu and Lao are used only under the saddle. At the capital the elephant administrators exclusively to royal luxury and ostentation. Among the royal titles, in addition to the peculiar one of the "golden foot," are those of "lord of the celestial elephant," "lord of all white elephants," "mounter of the sacred elephant," &c.,—by virtue of which his majesty is the acknowledged owner of all the elephants in the kingdom. White elephants are so rare as almost to be a wonder even in Ava. It is seldom that the "golden foot" has possessed more than one at a time; and these are not worshipped, as is generally supposed, but merely regarded as an essential part of the regalia.—It has always been a custom of the Burman kings to hoard vast treasures in their palaces, which they will never suffer to be touched for other than their private purposes, except in alarming political emergencies. Once a month, at the new moon, an imposing procession traverses the streets of Ava, and public criers read or recite the 5 principal Buddhist commandments—recommending parents to be kind to their children, and enjoining upon children to be dutiful to their parents. This procession is significantly headed by the public executioner, carrying a rod in one hand and a rope in the other; the rear of the procession is brought up by a drum and 2 gongs, a party of the king's guard, a led horse, an elephant carrying the chief herald, and 8 horses, bearing each a crier.—Ava was first made the capital about A. D. 1864; the government was at that time removed thither from Panya. Probably no other people have so frequently changed their seat of government as the Burmese; any frivolous pre-

text, of superstition or of royal caprice, suffices for the change. Within the last 5½ centuries Burman kings have shifted the capital 9 times. The great Alompra removed it to Moncha-boo, out of affection for his native place. His successor, who was his son, removed it to Sagaing, across the river from Ava, because the death of his father was a bad omen for Moncha-boo. The next "lord of the white elephant" brother to the last, removed the capital back to Ava, because it was the royal fashion to remove the capital. The bloody Mentarakhi, who seized upon the throne in 1782, took his court to Amarapoora, perhaps to get away from the scene of his unnatural crimes. He was succeeded by his grandson, who, by the advice of his conjurors and star-gazers, immediately set up his throne in Ava, which, by this time, had quite superseded Prome, the ancient capital, whose barbaric magnificence is historical. In 1839 every substantial edifice in Ava was destroyed by an earthquake; in consequence of which Moncha-boo, the birthplace of Alompra, again became temporarily the capital of the Burman empire. But since that time both Amarapoora and Ava have been honored by the preference of the court. In 1824, the Maha Bandoola, the great Burman general, was ordered to take Calcutta, and bring the governor-general in golden chains to Ava; and he was actually provided with the chains for that purpose. By the treaty of Yandaboo (Feb. 24, 1826) the Burman government agreed to receive a British resident at Ava, and Col. Burney was accordingly delegated to that difficult and dangerous post at the close of 1828. There he remained, in spite of slights and insults, and in constant danger of his life, till 1837, when the revolution resulting in the usurpation of Tharawaddi forced him to retire. Mr. Judson, the distinguished American missionary, to whom we are indebted for an excellent grammar and copious dictionary of the Burmese language, resided many years at Ava.—At the close, in 1853, of their second war with the Burmese, the British government, having had costly experience of the Punic faith of the nation, refused to contract another treaty with the court of Ava, but contented themselves with the menace of signal retribution for future outrages.

AVADOUTAS, a sect of Indian Bramins, who practise a more severe austerity than the other sects of the caste. They use the most disgusting as well as the most painful modes of self-humiliation. They put themselves into contorted positions, in which they remain until they have become permanently deformed. They go with matted locks, unpared nails, which grow to the length of bird-claws, and many of them go entirely naked. They live entirely on charity, and even for the alms-pittance they generally refuse to ask vocally, but entering a house, hold out their hands in silence, and eat whatever is given in response to this mute appeal. Others of them refuse even to

do so much as this, but retiring to the banks of some sacred river, wait in patient, and oftentimes the most extreme hunger, for what is spontaneously brought them by the lower classes of the people.

AVAL ISLAND, or **BAHREIN**, in the Persian gulf, near the coast of Arabia. It is 27 miles long and 10 miles broad, and produces an abundance of dates and other fruits. It is surrounded by several small islands, the chief of which are Arad, Maharay, and Tamahoy. The pearl fisheries here yield pearls to the value of £200,000 annually.

AVALANCHE (Fr. *avalange*). Upon the precipitous sides of lofty mountains, the bodies of snow, which accumulate, are sometimes liable to become loosened, and to be precipitated down to lower levels. This often happens in the Alps and Apennines, among which the term that designates the occurrence originated, and is still used with various modifications. Several different forms of avalanches are described. One is the drift avalanche, which is the light, dry snow swept from the mountains by strong winds, and accumulated in the valleys, sometimes to such depths, as to bury the villages it falls upon. Persons have been taken out alive from beneath these avalanches after being buried 24 hours. But more terrible and destructive are those formed by the damp, cohering snow, which, beginning in a small rolling body, gather with every turn increased proportions and velocity; and taking up in their progress loose rocks and earth, or the shattered limbs of trees, rush downward, clearing away forests, and sweeping off not only houses and villages, but the very lands on which they stand. Frightful catastrophes of this nature are recorded in the histories of the inhabitants of the mountainous regions of central and western Europe. In the year 1500 it is stated that 100 men were buried by one of these avalanches in the Great St. Bernard; and in 1624, in the Italian Switzerland, 800 soldiers were thus ingulfed; many of them, however, were afterward dug out alive. The villages in the high valleys of the Rhone, have been particularly exposed to these disasters. —In the memoir of the Rev. Joseph S. Buckminster, which accompanies the volume of his sermons, is an interesting account of the awful avalanche which occurred in the Canton of Schweitz, in Switzerland, on Sept. 3, 1806, destroying the villages of Goldau, Busingen, and Rathien, only a week previous to his visit to this locality. A projection of the mountain of Roesberg, called the Spitzberg, which rose about 2,000 feet above the valley and lake of Lowertz, became loosened from its foundations in consequence of long-prevailing rains; and the strata inclining with the slope of the mountain toward the lovely valley below, the huge mass slid downward like a mighty ship launched upon its ways. At the base the sandstones and limestones, which with their loosely cohering strata made this mass, broke with the shock into fragments, and spread with greater rapidity than

currents of lava, and with as fearful destruction to all objects around. In less than four minutes, it is said, three villages were completely overwhelmed, with portions of two others, and more than 1,400 of the peasantry were buried alive. A tract, 8 miles square, of one of the most delightful valleys in Switzerland, was instantly converted into a barren waste. Rude heaps of stones and earth covered its farms and villages, lying in desolate hills in the centre of the valley. They spread across to the opposite mountain of the Rigi, climbing far up its sides; and a portion of the falling mass plunging into the lake of Lowertz filled up a considerable part of it, and sent its waters rolling in an impetuous flood over its picturesque islands and shores. The village of Seven was submerged, and one of the largest houses in the place was lifted up and removed half a mile. To the traveller along the boundary of the ruins, a constant succession of melancholy views were presented. Fragments of wooden cottages were seen bristling among the piles of earth intermingled with thousands of shattered trees, torn up by the roots and projecting in every direction—a range of peasants' huts overthrown and crushed, and only partially covered—water-mills dashed to pieces by huge rocks, and the streams that carried them diverted into new channels. Birds of prey hovering over the valley continually, recalled the saddest feature of the scene—that beneath these ruins hundreds of wretched beings were hopelessly entombed. In 1827, the village of Briel in Obergestelen was almost entirely covered with an avalanche. The rolling avalanches sometimes change in their descent to sliding masses, and these take in their progress every movable body down to the solid rock of the mountains. Hills of gravel and loose rocks, covered with forests and dwellings, are thus carried down to lower levels, and in cases of vineyards thus removed, intricate questions of proprietorship have arisen. The glaciers are also another form of avalanche, which will be described under that term.—Sliding masses of earth and rock, loosened by the rains or by the thawing of the frosts, are a form of avalanche not uncommon in this country. Such was the avalanche, which on the night of Aug. 28, 1826, descended the slope of the notch of the White mountains, and overwhelmed the family of Mr. Willey, consisting of himself and wife, 5 children, and 2 hired men. A rain storm of terrible violence loosened the covering of earth and loose rocks and the vegetation upon it in numerous places along the mountains; and the slides of this night laid bare the bald rock in some points extending over 100 acres, where it had never before been seen. In the Notch one of these avalanches appears to have come down directly toward the house, which stood in the narrow gorge through which the Saco river flows. Above, it was parted, however, by some obstacle and came down in two bodies, one each side of the house, leaving this unharmed in the midst of

its track. The family, terrified by the awful commotion, sought safety without, but were all buried in the midst of the rocks and the ruins of the forests brought down with them. The bodies of all but two children were afterward dug out shockingly mutilated. The family that occupied the same house the next year, witnessed another avalanche somewhat similar. The night was intensely dark, and the rain poured in torrents down the sides of the mountain. In these gloomy recesses the roar of the thunder by night, seeming to shake the very mountains, is always terrible; but in this instance the noise of the elements and the vivid flashes of the lightning were mingled with the no less appalling crash of the falling rocks, and the light sent forth from their concussion upon the solid granite vied with the lightning in illuminating the awful grandeur of the scene.

AVALLON, a town of France, department of Yonne, on the Voison, 26 miles S. E. of Auxerre. It is surrounded by a country renowned for fertility and beauty. It has considerable trade and manufactures of woollen cloths. Pop. in 1852, 5,922.

AVANT LA LETTRE was originally an engraving struck off from the plate to serve as a proof for the artist himself, before he delivered the plate to his publisher. It received its name from the fact that such proofs had no inscriptions. In the zeal of amateurs to obtain finer copies than the merchant could furnish, recourse was had to the artist to obtain from him these first proofs. Publishers wishing to share the benefit which the engraver thus often illicitly obtained, also struck off what were termed proofs *avant la lettre*, and the abuse was carried so far that sometimes this name has been given to as many as 800 impressions.

AVANZI, JACOPO, DA BOLOGNA, an Italian painter, who flourished about the latter part of the 14th century, and studied under Franco da Bologna. Several of his works in the Chiesa di Mazzaratta in that city were much praised by Michel Angelo.

AVARS, a Finnish, Scythian, or Mongolian tribe, that appeared about a century after the Huns from the Caspian, along the Volga to the Don. Part of them remained around the northern slopes of the Caucasus, while others penetrated in A. D. 555 to the Danube and settled in Dacia. They served in the army of Justinian, allied themselves with the Longobards against the Gepids, and finally occupied Pannonia or modern Hungary, and established their dominion over all the Slavi along the Danube. Their sovereigns were called khans. The mightiest among them was Boian, whose dominions extended on both sides of the Danube to the Black sea. He is often mentioned in the Byzantine histories, as the eastern emperors trembled before him, and paid him tribute. The Avars were cruel oppressors of the tribes subdued by them. The Slavic women they used, not only for their harems but for horses, obliging them to drag the wagons in which they

journeyed. They seized Dalmatia, made inroads into Italy and into the heart of Germany. In 640 the Slavi revolted, and the dominion of the Avars over them came to an end. But they still maintained themselves in Pannonia; and were still powerful and dangerous neighbors, occupying the lands forming Austria to the river Enna. They allied themselves to Thasilo, duke of Bavaria, against Charlemagne, and this put an end to their dominion, already weakened by divisions among their petty khans. One of them, Tudun, joined Charlemagne, and was baptized at Aix la Chapelle, but again abandoned the emperor and fought against him until he was taken prisoner and beheaded. After several successive and successful campaigns against the Avars—campaigns considered among his bloodiest, Charlemagne stormed their celebrated walled camps one after another, and in 799 overthrew them almost entirely. These celebrated camps, called rings, and whose remains, under the name of Avarrings, are still to be found in Hungary, near the river Raab, were surrounded by strongly palisaded walls, forming an uninterrupted chain over the whole country. In these rings the Franks of Charlemagne found enormous booty. About 827, the Avars disappear wholly from history, being absorbed by the Moravians on the north and the Petchingues on the south. The Avars have been confounded with their forerunners, the Huns, and with their successors, the Magyars, a confusion arising from all of them having occupied Pannonia, and all of them having been of the same Finnish, Scythian, or Mongolian origin.

AVATAR, a Sanscrit word, signifying "a descending," usually applied in a religious sense, and in reference to the incarnation of the Hindoo deities. Whence the doctrine of the avatar is derived is a point that has received no satisfactory solution. The most important avatars of Vishnu, one of the persons of the Hindoo trinity, are: 1, that of the fish in which he preserved Manu, the first man, during a deluge; 2, the tortoise, when Vishnu supported the earth while the gods and the Asuras extracted the immortal drink (*amrita*) from the sea; 3, the boar, in which he slew the chief of the Asuras, the opponents of the gods; 4, the lion-man, in which he killed the deceased Asura chief's brother; 5, the dwarf, in which form he played a trick on King Bali, of whom he asked as much ground as he could measure in 3 strides, and the king having granted the request, the god, at once manifesting himself, strode over earth, air, and heaven; 6, the man Parasurama, the son of Jamadagni and Renuka, when he rescued the Bramins from the tyranny of the Kshatriyas; 7, Rama, the son of King Dasartha, when he destroyed various demons—the Sanscrit epic of Ramayana describes these exploits; 8, Krishna, the greatest of the avatars, when he assisted the family of the Pandavas against the Kooros, and conquered the wicked of the earth—this is the subject of the Mah-

bharata; 9, Buddha, in which he persuaded the Asuras, the ancient enemies of the gods, to abandon their faith in the Vedas; 10, Kalki, the name of the avatar of Vishnu, when he shall come again to restore peace and purity on earth. The fables of the Hindoo mythology, like those of the ancient Egyptians, are believed by the learned to be the husk of many elementary truths of moral and physical science.

AVATCHA, or AVATCHKA, a fine bay and harbor in the S. E. part of Kamchatka. Petropaulovski lies here, at the mouth of the Avatcha river.

AVATCHINSKAYA, or MOUNT AVATCHA, a volcano in Kamchatka, in lat. 53° 15' N. and long. 158° 50' E., rising to an elevation of 9,055 feet. It has a crater at its summit several hundred yards in circumference, and another on its side at an elevation of 5,000 feet. Its last-recorded eruption occurred in 1827, when it discharged with great violence vast quantities of lava, stones, and water.

AVE MARIA, a short prayer much used in the Roman and Greek Catholic churches. The first clause is the salutation of St. Elizabeth to the Blessed Virgin, with the names "Maria" and "Jesus" added. The second clause is an acclamation employed by the fathers of the council of Ephesus and the people generally, to express their joy at the decision of the question raised by Nestor, whether Mary is truly the mother of God. It is usually joined with the Pater Noster.

AVEBURY, a village in Wiltshire, England, notable as the site of the remains of the largest Druidical temple in Europe. In an open plain, free from trees, 650 blocks of stone, varying from 5 to 20 feet above ground, and 3 to 12 in breadth and thickness, were brought together. One hundred of these were set on end round an area 1,400 feet in diameter; and these were enclosed by a ditch and mound with 2 breaks for openings. The area within the bank is over 28 acres. From the arrangements it has been conjectured that there were within this great circle 2 smaller circular temples, beside 2 avenues of great stones leading to the entrances from a distance of more than a mile. Not far from the temple is the great artificial mound of Silbury hill, whose base is 5½ acres, and height 170 feet perpendicular. The actual remains of this great monument are very much diminished. The mound and ditch remain, but the descriptions of 2 centuries ago show that a constant removal of the relics has been steadily going on ever since, and in a very few years hence all will be gone that is capable of removal.

AVEDIK, a patriarch of the schismatic Armenians, became notorious at the beginning of the 18th century for his persecutions of the Roman Catholic population, and at the request of M. Ferriol, the French ambassador at Constantinople, he was expelled from his office and from the country. While on the way to Scio, he was seized by his opponents, shipped off to

Messina, and put in prison, where, it is thought, he remained for the rest of his days. When this act became known in Constantinople, the sultan laid the blame at the door of the French ambassador, who, in order to clear himself from all responsibility in the matter, undertook to procure the release of Avedik and his return to Constantinople. But this was never done, nor would the name of Avedik ever have been deemed worthy of so much attention, if some imaginative, romantic Frenchman had not circulated the story that Avedik had not been shipped to Sicily, but to Paris, and that, in fact, the mysterious man with the iron mask was this identical patriarch of the schismatic Armenians. Unfortunately for this story, the iron mask man gave up his mysterious soul in 1708, while poor Avedik was still languishing in the dungeons of Messina in 1707, little conscious of the ludicrous immortality which was in store for his memory.

AVELLANEDA, GRETUDIS GOMES DE, the most famous Spanish poetess of the present time, born in 1816 at Puerto Principe, in the island of Cuba, where her father, a native Spaniard, was commander of the fleet stationed in that harbor. She lost her father in early youth, and after the subsequent marriage of her mother with Col. Escalada, lived several months at Bordeaux in France. She returned to Cuba, but after 2 years left it again for Europe, and lived successively at Corunna, Cadiz, Constantina, and Seville, till in 1840 she settled at Madrid. Her *Poesias Lyricas*, published at Madrid in 1841, under the name of "Peregrina," introduced her into the circle of Spanish poets and writers, and were soon followed by her novels, *Sab*, *Dos mugeres*, *Españolito*, and *Baronesa de youz*. In her earlier years she had made several dramatic attempts, which had obtained the applause of her friends in Cuba, and she now wrote for the stage of Madrid the tragedy of *Alfonso Munio*, which was received with general favor; while she gained new laurels by her dramas of *Principe de Viana* and *Egilon*. In 1846, she married Don Pedro Sabator, a young politician and member of the cortes, who, however, died the same year while returning from Paris. The poetess in her affliction shut herself up for several months in a convent, and even after her return to Madrid, refrained from society and from literature. Her next novel, *El donativo del diablo*, did not appear till 1849, and was quickly followed by a successful poem, *La Cruz*. The second edition of her lyrics, published the next year, closed with *El ultimo acento de mi arpa*, in which she took leave of lyric poetry; and she has since devoted her talent almost exclusively to the theatre. Of her numerous dramatic pieces, recently produced, the tragedies of *Las glorias de España*, and *La hija de las flores*, and the comedy of *Simpatia y antipatia*, have been especially well received.

AVELLINO, a fortified town, capital of the

province of Principato Ultra. This city was visited by an earthquake in 1694, from the effects of which it has never recovered. The Val di Gargano lies between Avellino and Benevento, famous for the triumph of the Samnites over the Romans in the year of Rome 448. Avellino has an extensive trade in chestnuts, hazel-nuts, and corn. Pop. 22,873.

AVENBRUGGER, LEOPOLD, the inventor of the method of investigating internal diseases by auscultation, born in Grätz, Styria, 1722, died in 1809. He first made known his discovery in a Latin treatise entitled *Invenitum Novum* (1761), which was translated into French by Rozière (1770), and again by Corvisart (1808). An English translation by Dr. John Forbes was published in 1824. See AUSCULTATION.

AVENTINUS, one of the 7 hills upon which the city of Rome was built, situated between the Tiber, Mount Caelius, and Mount Palatinus. This hill is celebrated in fable as the abode of the giant Oacus, who was killed by Hercules. Houses began to be erected on it in the reign of Ancus Marcius, and it was afterward adorned by the temples of Hercules, of Diana, and of Liberty. It bears now the name of Monte di Santa Sabina.

AVENTINUS JOHANNES, a Bavarian historian, whose real name was Thurmayer, but who adopted the Latin name of his native place, Abensberg, born in 1486, died at Regensburg in 1534. He wrote the annals of Bavaria (*Annales Bojorum*, first published by Hieronymus Zieglerus, in 1554, and the last edition brought out in 1710, by Gundling, at Leipsic), and the *Chronicon Bavariae* (Nov. 1522). These 2 works procured for him a high reputation, which his philological work, *Rudimenta Grammaticæ Latinæ* (1512), tended to increase. In 1529, he was unjustly accused of heresy, and kept for some time in prison. After his release, one evening, after having read attentively the passages in the Bible which bear upon matrimony, he thought it incumbent upon him, though he was 64 years old, to marry the first woman he happened to see. This unfortunately turned out to be a dwarfish, idiotic creature; but he married her, and passed miserably enough the 4 remaining years of his existence.

AVENTURINE, a term in mineralogy applied to a variety of quartz, and also to one of feldspar. The peculiarity in each, for which the name is given, is the play of reflected or refracted light from numerous points in the mass of the stone—the reflections being bright and sparkling, and of different colors, while the ground may be translucent with little brilliancy, and of a dull color. The effect is probably produced by the crystalline faces in the structure of the stone refracting the light differently. There are, however, some varieties, called also aventurine, in which the play of colors results from the presence of numerous little scales of mica, or other foreign ingredients, each of which reflects the light, and all together produce a similar effect to that of the true varieties of aven-

turine. An artificial glass of this name was formerly manufactured at Venice, which was well adapted to ornamental purposes, being even more beautiful than the natural minerals. Within the glass were substances apparently vitreous, of great brilliancy, of the color of copper, and in very small crystals of the form of tetrahedrons. These were probably particles of metallic copper reduced and crystallized in the glass. Such crystallization has been observed to have taken place in the slag of copper furnaces. The glass analyzed by Peligot gave 8.9 per cent. of copper, 8.5 per cent. of oxide of iron, 2.3 per cent. of oxide of tin, and 1.1 of oxide of lead. The tin and iron aid in the reduction of the copper and the formation of the crystals, and the former is converted into the silicate of the protoxide, thus giving no opacity as it otherwise would to the glass.

AVENZOAR, an Arabian Jew, in the 12th century, who practised physic at Seville, and at Cordova. He was the teacher of Averroes.

AVERAGE. I. GENERAL, sometimes called gross or extraordinary; in mercantile law, the contribution made by all the parties concerned in a sea adventure to make good an expense or loss sustained by one or more of them for the benefit of all. The fundamental principle of the law of general average, as expressed in Justinian's Pandects, and adopted by all commercial nations, though with considerable diversity of practice, comes from the Rhodian law, the first known system of marine law, which thus stated the rule: "If goods are thrown overboard in order to lighten a ship, the loss incurred for the sake of all shall be made good by the contribution of all." It would be difficult to set forth the essentials of a case for general average more clearly than they were recently stated in the supreme court of the United States (Barnard v. Adams, 10 How. 270), Mr. Justice Grier delivering the opinion: "In order to constitute a case for general average," he says, "three things must concur: 1. A common danger, or a danger in which ship, cargo, and crew all participate,—a danger imminent and apparently inevitable, except by voluntarily incurring the loss of a portion of the whole to save the remainder. 2. There must be a voluntary jettison, *jactus*, or casting away of some portion of the joint concern for the purpose of avoiding this imminent peril; or, in other words, a transfer of the peril from the whole to a particular portion of the whole. 3. This attempt to avoid a common peril must be successful. The right to contribution is not made to depend on any real or presumed intention to destroy the thing cast away, but on the fact that it has been selected to suffer the peril in place of the whole that the remainder may be saved." Not only the value of the property destroyed, but what follows as a necessary consequence of its destruction, as injurious to other goods, expenses of refitting, the wages and provisions of the crew in the port of relief, are subjects of contribution. So is also ransom paid

o a pirate, by both the common and civil law (the rule of which, on this point, has been recently repealed in England), and in general, whatever necessary and voluntary loss or expense is incurred by a part for the good of all. Goods finally saved must contribute for as sustained in procuring temporary safety. By the French ordinance, goods stowed upon deck are expressly excluded from the benefit, not from the burden of general average, since they are supposed to hamper the vessel and increase the danger; and such is the general error of both the English and American law. In the courts of all three countries, however, an established usage to carry upon decks as with small coasting vessels, is allowed to take a case out of the operation of the rule. Both the continental and the American law is somewhat more liberal than the English, as regards the subjects of general average, but the difference consists not in the nature but in the application of principles. The victuals and ammunition of a ship do not contribute in a case of general average, nor whatever is necessary to the persons of those on board, as wearing apparel, &c., nor the passengers for their own safety, nor the crew for their wages, lest apprehension of personal loss should deter them from personal sacrifice. The rule of the civil law that "those things alone which pay freight contribute," is, with slight variations, the general law on this point. The rate of contribution is in proportion to the safety obtained, according to value, not weight. The rules upon which this adjustment is made differ in different countries, and are not well settled anywhere. It is a matter of such nice calculation, that in most commercial ports, the computation and adjustment of general average constitute a special branch of business, attended to by a special class of men. By the civil law, the master of the vessel was required to see to this, and the provisions of the French ordinance are somewhat similar, but are practically disused, the work being performed by *dépêcheurs*, as they are called. II. PARTICULAR, an almost obsolete barbarous expression, used to signify a partial loss, which must be borne by the immediate loser alone. III. PETTY averages are sundry small charges borne in common by the owners of a ship and cargo, like pilotage, towage, anchorage, light-money, quarantine, &c.

AVERANI, GIUSEPPE (also AVERANTUS), an Italian scholar, born in 1662, died 1738, celebrated by his defence of Galileo's philosophy and by his commentaries on Eutocius Ascalon's works on Archimedes. His defence of Galileo's theories is contained in his treatise entitled *De momentis corporum gravium in planis inclinatis*. He experimented upon burning mirrors, quired into the swiftness and propagation of sound, and studied the phenomena of light and electricity. At the time of his death he had explored almost all the walks of human knowledge.

AVERNUS, a lake in Campania, connected, by a narrow channel, with the Lucrine

lake. Strabo says that it was almost surrounded by steep and thickly wooded hills, and that its effluvia polluted the atmosphere. The ancients fancied that birds were invariably stupefied and drowned whenever they essayed to cross it. According to popular tradition, Ulysses here made his descent to the infernal regions. The forests on the Avernine hills were dedicated to Hecate, and in them altars were raised and sacrifices offered to her. But all these vanished when Agrippa connected the lake with the sea and converted it into a harbor; and as soon as its hills were unwooded and its marshes drained, the mephitic atmosphere became purified.

AVERROES, ABUL WALID MOHAMMED BEN ACHMED BEN MOHAMMED BEN ROSED, the greatest of the Moorish philosophers of Spain, born at Cordova, A. D. 1149, died in Morocco, either in 1198 or 1206. He studied law under his father, theology and philosophy under Thophail, medicine with Avenzoar. He was appointed grand mufti or chief judge, and filled the office first in Spain and afterward in Morocco. He was there accused of entertaining heretical opinions, and being summoned to Morocco, was deposed, and obliged to do public penance at the door of the mosque. He wandered into Fez and thence back to Spain, and continued in obscure indigence until the accession of the caliph Al-Mansoor, who restored him to his former position. Averroes wrote voluminously, there being as many as 78 distinct treatises of his in the library of the Escorial. He translated the works of Aristotle, for whom he entertained a profound veneration. His religious opinions were, that God, being the great and universal first cause, was the author of all human actions, but that men being free are nevertheless responsible for their obedience to the precepts of religion. His works embraced medicine, philosophy, Mohammedan philosophy, and jurisprudence. They have been translated into Latin.

AVERY, WAITSTILL, an American lawyer, and patriot of the revolutionary period, born in Norwich, Connecticut, died in Burke county, North Carolina, in 1821. He graduated at Nassau Hall in 1766, and after studying law in Maryland, removed to North Carolina in 1769. He practised his profession successfully; was appointed in 1777 attorney-general of North Carolina, and was at the time of his death the patriarch of the bar of that state. He was also prominent in the political affairs of the state, being a member of the state congress prior to the revolution, and of the state legislature after the establishment of peace. In 1777 he was appointed one of a commission to treat with the Cherokee Indians.

AVERY'S GORES, several tracts of land in Vermont, granted to Samuel Avery in 1791. One of them is in Addison county, nearly on the summit of the Green Mountains, now forming a part of Granville.

AVESNES, the name of a French arrondissement.

ment in the department of Nord, with 110,000 inhabitants; also a fortified town on the Helpe, with about 4,000 inhabitants. Avesnes is one of the many fortresses which protect France on the side of Germany, and which were built under the reign of Louis XIV. It is fortified according to the system of Vauban. By the terms of the peace of 1815, Avesnes was occupied by the allies.

AVEYRON, a department in the south of France, forming a part of the old province of Guienne. It has an area of 8,429 square miles, and is subdivided into 5 arrondissements, 42 cantons, and 259 communes; pop. in 1851, 394,183. It is one of the most mountainous districts in France. Aveyron has mines of copper, lead, silver, zinc, iron, and coal; the latter are among the most valuable in France. Cattle are raised in great numbers. The famous Roquefort cheese is exported in large quantities. Rodez is the capital.

AVEZAC. I. PIERRE VALENTIN D', a French settler in St. Domingo, born at Tarbes, in 1719, died at St. Domingo, in 1781. He was destined by his father for the church, and studied in Paris until he was fitted to enter orders. He then conceived a disgust for his intended profession, and suddenly embarked, in 1748, for the island of St. Domingo. There he exhibited his talents as a lawyer and military officer, and having become a planter, distinguished himself by the enterprise and skill with which he cultivated his lands. He cut a road across the mountains from La Grande Anse to the Cayes, thus connecting his possessions in these 2 places; and having persuaded his neighbors to unite with him in an attempt to fertilize the beautiful plain of the Fond, he constructed, without the assistance of an engineer, at an expense of £30,000, a canal 3 feet broad, and 9 feet deep, which, after extending a league, was divided into branches, and irrigated more than 9,000 acres of land, and supplied water power to 19 important manufactories. The work was completed in 1765, and was so much admired as to obtain for D'Avezac the patronage of the government in settling with the stockholders.

II. JEAN PIERRE VALENTIN JOSEPH D', son of the preceding, a politician of St. Domingo, born in 1756, died in 1808. The waves of the French revolution reached to St. Domingo, at that time a French colony, and D'Avezac was one of the 85 deputies chosen by the planters in 1790 to resist the progress of the new ideas; and having embarked with his associates for France, they were received enthusiastically at Brest. Their conservative mission was not, however, relished by the party in power in France, and having returned to St. Domingo, they were obliged, by the efforts of partisans of the revolution, and by the insurrections of mulattoes, to seal with their blood the cause which they had espoused. D'Avezac, after having lost, in the civil war which ensued, 2 of his sons and several other near relatives, escaped first to Jamaica, and then to New Orleans. He re-

turned to St. Domingo in the expedition of La Clerq, and died of grief at the Cayes, amid the remnants of the formerly flourishing colony which had been destroyed during the anarchy. III. AUGUSTE GENEVIERVE VALENTIN D', eldest son of the preceding, an American lawyer and civilian, born in St. Domingo, died in 1850. He was educated in France, and took refuge with his family in the United States, from the negro insurrections in his native island. He studied medicine in North Carolina, settled as a practising physician in Virginia, and afterward, at the suggestion of his brother-in-law, Edward Livingston, studied law, and rose to distinction in his new profession in New Orleans. In the war of 1812 he acted as judge-advocate and aid to Gen. Jackson, and in 1831 he was appointed by Gen. Jackson, who was then president, as chargé d'affaires at the court of the Netherlands. He subsequently changed his residence to the city of New York, which he twice represented in the state legislature; and again, during the administration of president Polk, he held the office of chargé d'affaires at the Hague. IV. PIERRE VALENTIN DOMINIQUE JULIEN D', a younger brother of Jean Pierre V. J. d'Avezac, a French scholar and exile, born at St. Domingo, Jan. 17, 1769, died in the United States, Feb. 7, 1831. He received a learned education in France, and at the outbreak of the revolution sailed to his native island, vainly hoping to save some of his possessions there. From the prevalent tumults and massacres he found an asylum in New Orleans, and there passed his time in the pursuits of a scholar. He read the masterpieces of European literature in their original languages, and loved to translate poems from one language to another. He sent a French version of the "Marmion" of Sir Walter Scott, accompanied by a graceful letter, to the famed romancer, who was pleased with the compliment. He is also the author of the French official translation of the penal code of Louisiana.

AVEZZANA, JOSEPH, an Italian soldier, who, for many years, has found a refuge from the misfortunes of his native country in the United States, and followed mercantile pursuits in the city of New York, born Feb. 19, 1797, at Ohieri, in Piedmont, 9 miles from Turin. He joined the army of Napoleon in 1813, and was engaged in the campaigns of that and the following year; upon the fall of Bonaparte, Avezana entered the service of the king of Sardinia, and was attached to the regiment of Turin. After Napoleon's escape from Elba, this prince joined the league against him, and thus Avezana, in the campaign of 1815, was opposed to the leader he had enthusiastically followed the two previous years; for already the hope of national independence had dawned upon his country and enlisted his ardent sympathies. He continued in the Sardinian army until March, 1821, when the popular indignation against the Austrians had reached its

ome; a revolution had broken out at Naples; and Avezzana, with a brother officer, and 100 of their followers, also revolted. They were joined by a large number of young men, chiefly students, and marched toward Alessandria, which fortified city had declared for the popular cause. The day afterward the citizens of Turin rose, and the king, unwilling to yield, and unable to refuse, abdicated in favor of his son, Carlo Alberto, then prince of Carignano, who swore to a liberal constitution; the latter, however, soon joined the reactionary party, a battle ensued, in which the republicans were defeated, and Avezzana and his companions were obliged to emigrate. He now offered his sword to pain, then enjoying a constitutional government, and toward the end of April, 1821, enlisted as captain of infantry, and continued faithfully to serve the popular cause, until his division encountering an overwhelming force among the mountains of Almajaron, in the province of Murcia, he was forced to surrender to the duke of Angoulême's army, which had come to the aid of the Spanish royalists. After being a prisoner of war for several weeks, Avezzana embarked for America, and arrived at New Orleans at the close of the year 1823. He engaged in trade in the interior of Louisiana for 2 years, and then with a view of improving his fortunes, visited Mexico, and obtained a grant of land on the site of the present city of Tampico, then a wilderness. Its growth was rapid, and in a short time he obtained a handsome competence; but unfortunately in June, 1829, the place was invaded by the Spanish army, under Gen. Barradas; and his known military experience and personal integrity of Avezzana, caused him to be appointed captain of the international citizen militia, and subsequently of that of the state of Tamaulipas. The enemy's superior force made retreat to the interior unavoidable; and he was obliged thus to leave his entire property in the hands of the Spaniards; when reinforced, however, he renewed the attack, and drove the invaders to a capitulation, and by his influence with the resident merchants and local authorities, was soon enabled to reinstate himself both in position and estate. In 1832 commenced a revolution in Mexico under Santa Anna against the rule of Gen. Bustamante; it broke out in Vera Cruz, in the neighborhood of which city Santa Anna was defeated at the battle of Tolome, notwithstanding which, thearrison of Tampico declared in his favor. hereupon 2,000 men were ordered by the government to march against that city. Avezzana, true to his principles, immediately abandoned his business, hastened to the fortifications, and a successful repulse, and was intrusted with their defence by Gen. Montezuma, who, leaving Tampico to promote the revolution more effectually elsewhere, upon Avezzana rested the command. His meagre force making the position doubtful, by a rapid and most fatiguing march, with 350 infantry, 80 horsemen, joined

on the way by 70 of the enemy's cavalry, he reached the state capital 80 leagues distant, and on the evening of Aug. 6, encamped near Ciudad Victoria. At daybreak he attacked the enemy; the action continued 4 hours, when the garrison surrendered, 1,000 men, including Gen. Ignacio Mora, their commander, became prisoners of war; 5 pieces of artillery and a large quantity of ammunition fell into the victor's hands; a reinforcement of the enemy on its way to Ciudad Victoria, fell back toward Matamoras, on learning the fall of that city, leaving exposed the important position of Soto la Marina, which Avezzana hastened to occupy. His first use of these signal advantages was to reinstate the governor and legislature of the state, previously expelled by Gen. Bustamante; recall the militia he had disbanded, and then with a force increased to between 1,300 and 1,400, march against Matamoras, which instantly yielded, and soon after the state of Nuevo Leon followed the example. Meantime, however, Gen. Montezuma had been completely routed by Bustamante's troops at the Gallineros; and Avezzana retreated to Tula in the Cordilleras. Collecting the fugitives, he proceeded to Valles on the river Montezuma, and at the end of Nov. 1833, marched against San Luis Potosi, then in possession of the enemy. This place he besieged, and for 23 days advanced from street to street, until the garrison capitulated. Soon after the treaty of Zavaleta confirmed the triumph of the liberals, and Avezzana resigned his command, having been previously named general of the state of Tamaulipas by Santa Anna, and of the states of Oahuilla, Texas, and Nuevo Leon, by Montezuma. He then returned to Tampico, and resumed his peaceful avocations. In 1834, however, he removed to the United States, and established himself in mercantile business in the city of New York, and soon after married a most estimable Irish lady. Fourteen years of regular, and, on the whole, successful industry and domestic happiness passed, when the political excitement which convulsed Europe in 1848, seemed to promise liberty to Italy, and Avezzana responded to the appeal of his country. On his arrival there he was immediately appointed commanding-general of the national guards of the city of Genoa. When Carlo Alberto's defeat at Novara, and abdication occurred, and the armistice with the Austrian general was signed by his successor, Avezzana, the national guards, and the people of Genoa protested, and urged a continuation of the war; a collision followed, and the troops of the garrison yielded to the popular fury. A few days after, 80,000 men were sent against Avezzana and his followers, by the Sardinian government, with whom they sustained a desperate conflict during 4 days, when, his force reduced to a small band of patriots, he resigned the military government intrusted to him, into the hands of the municipal authorities, and withdrew on board the U. S. steamer Princeton,

whose commander, Captain Engle, kindly received him and his devoted little band, and set sail for Leghorn, where they embarked in the U. S. steamer *Alleghany*, and were safely landed at Civita Vecchia. Thence Avezzana hastened to Rome, then under a republican government. The zealous ally of their cause, he was heartily welcomed by the Romans, and appointed minister of war by the government. Soon after came the news of the French expedition, and Avezzana had scarcely time to concentrate the troops scattered through the Roman states and prepare for the defence of Rome, when the French army reached the city. Having been previously appointed commander-in-chief of the army, the duties of Avezzana, at this crisis, were onerous in the extreme, but, by April 30, 1849, when the invading host appeared before the eternal city, all was prepared for their reception; and their attacks were successfully repulsed. For 2 months a small body of republicans kept at bay 4 armies, together amounting to 100,000 men. Avezzana remained to the last moment of the struggle, and on the night of July 2, found refuge in the house of Nicholas Brown, the American consul at Rome, and a warm friend to the republican cause; he hospitably received and judiciously befriended Avezzana, who, on the following night, succeeded in reaching Civita Vecchia in disguise, notwithstanding the vigilance of the victorious army. There an American consul's house again sheltered him; thence he wrote to the captain of the British man-of-war *Bulldog*, then in port, asking for himself and his 2 secretaries to be received on board. The officer hastened to Avezzana, and accompanied him with a safe escort on board his vessel; the French steamer *Tonnère* happened to lie near, and fearing a discovery, he immediately put to sea, and, having stopped a few hours at Naples, proceeded to Malta, where he landed his guest in safety. Avezzana there took the oriental steamer on her way from Alexandria, in Egypt, to England; and, on reaching London, embarked for America, and arrived at New York, restored once more to the bosom of his family and the life of a merchant, at the end of August, 1849, having been absent from his adopted country (where he has ever since remained) precisely a twelvemonth.

AVIANUS, FLAVIUS, the author of 42 *Æsopian fables* in Latin elegiac verse, of very inferior merit. They were printed in Holland, separately, in 1494. Oaxton had previously printed an English translation in 1488. The author probably lived about the 5th century.

AVIARY (Lat. *avis*, a bird), a place for keeping and breeding birds. Aviaries are often of large extent, enclosing trees, and artificially warmed, so as to furnish to foreign birds their native climate. Those for native birds may be only a frame-work covered with netting. Small aviaries are often found in gardens, attached to summer-houses or hot-houses. The exotic birds that are most frequently found in them are

canaries, turtle doves, gold and silver pheasants, and birds of the parrot and pigeon tribes.

AVICEBRON, an Arabian philosopher, often cited by William of Auvergne, Albert the Great, and other scholastics of the 13th century, as the author of a work entitled the "Source of Life." The doctrine of Avicebron seems to have been a sort of pantheism, founded upon the Aristotelian philosophy, which, however, did not prevent him from being treated with great respect by the doctors of the middle ages. William of Auvergne even supposed, from some principles declared in his book, that Avicebron had professed Christianity. This Arabian philosopher has recently been identified with a Spanish Jew named Salomon ben Gabirol, celebrated in the synagogue as a hymnologist, and who died at Malaga in 1070. The name Avicebron is derived from Ibn-Gabirol, by a series of changes allowed by the analogies of the language. Avicebron is thus anterior to all the celebrated Arab-Spanish philosophers, and proves that philosophy was cultivated in Spain by the Jews before the Arabs. His name, however, has remained unknown to the Mussulmans, and he seems to have enjoyed but a limited reputation, and to have exercised but slight influence in his own age. He alarmed the theologians by the philosophical boldness with which he treated the teachings of Moses, and dissatisfied the Aristotelian Jews by the concessions which he made to orthodoxy respecting the creation and the freedom of the Creator; yet his works are cited with applause in the 13th century by 2 Jewish philosophers.

AVICENNA, ABU ALI KEN ABDALLAH KEN SINA, a famous Arabian physician, born at Afsenna, near Bokhara, 980, died 1036 or 1037. He practised physic at the age of 16, and received the appointment of physician to several of the Samanide sultans of Bokhara. He resided both at Hamadan and Ispahan. He wrote upon medicine and metaphysics, and his system of medicine, principally compiled from the Greek writers, was in high repute with Europeans, who drew from it their chief if not only knowledge of Galen and Hippocrates.

AVIGLIANO, a town of the province of Basilicata, in the kingdom of Naples; pop. 9,670. It has a handsome collegiate church, a royal college, and several convents. A portion of the town was destroyed by a land slide in 1824.

AVIGNON, a town of France, in the department of Vaucluse, 408 miles S.S.E. from Paris, on the Rhone, which is here crossed by an elegant suspension bridge, built in 1844. It is an archiepiscopal see, and has courts of the first resort and of commerce, a lyceum, a seminary, a public library of 50,000 volumes, museums of antiquities, paintings, and natural history, a botanical garden, an agricultural society, and an association called the academy of Vaucluse. Its industry is active, especially in the cultivation of madder, in the manufacture of silks, col-

red cloths, and taffetas, and in copper, lead, and iron works. It carries on an extensive trade in all the productions of the department, particularly in grains, and highly esteemed wines. The town is generally well built, in the form of an almost regular oval, and its walls, rather beautiful than strong, are flanked with towers, adorned with battlements, and surrounded by handsome boulevards. The streets are narrow, but there are magnificent wharves along the Rhone and numerous ancient and remarkable edifices. Among the latter is the palace of the popes, a sombre gothic structure of the 12th century, the former residence of the popes of Avignon, built upon the rock of Doms at one extremity of the town; in one of its dungeons the Roman tribune Rienzi suffered imprisonment, and it is now transformed into a prison and barracks. Above this palace, on the summit of the rock, rises the metropolitan church of Notre Dame des Doms, which was rebuilt by Charlemagne, and which contains the tombs of popes John XXII. and Benedict XII., also of several cardinals and of the brave Gen. Crillon. The most remarkable feature of this church is the doorway, which is believed to be a remnant of a temple of Hercules. The city hall, founded in 1258, is crowned with an ancient belfry and clock, and with 2 large moving figures, one of which strikes the hours. Among the other older edifices are the Gothic church of St. Peter, the chief of which is a masterpiece of sculpture; the church of St. Agricol, with the tomb of the saint Mignard; and the *Hôtel des Invalides*, with a fine garden open to the public. The theatre, built in 1824, is one of the most splendid in France. This city was the capital of the Allic tribe of the Cavares, prior to the conquest of Gaul by Julius Cæsar. It remained under Roman domination till the 5th century of our era, when the Burgundians took possession of it, one of whose kings, pursued by Clovis, here sustained a memorable siege in the year 500. The Burgundians were expelled by the Ostrogoths, who in turn yielded it to the Franks about the middle of the 6th century. The Saracens, in their progress northward from Africa, twice, in 780 and 787, took Avignon, and at other times were forced to retreat from it by Charles Martel. It was a Carolingian city till 1030; then it several times exchanged its masters, became a republic under the protection of the German empire, adhered to the Albigensian heresy, and was captured by Louis VIII. in 1226, who made it the common inheritance of his sons. In 1309, Pope Clement V., a native of France, at the request of Philip the Fair that he would reside in France, established himself at Avignon. The city and its dependencies were purchased by the supreme pontiff from Joanna of Naples, and the 5 popes from Clement V. to Gregory XI., from 1309 to 1377, made their residence here; and during the great schism, from 1378 to 1418, one of the rival popes always resided in Avignon. This was the

most brilliant period in the history of the city, when the papal court was visited by sovereigns who came thither to be crowned, and by ambassadors from distant countries. Here Petrarch first saw the beautiful Laura of Noves, whom he immortalized in his sonnets, and whose tomb is still pointed out in the city. After the close of the schism and the transfer of the pontifical see to Rome, Avignon was governed by the legates of the pope, till in 1791 France succeeded, after various attempts, in reclaiming it. During the reign of terror it was the scene of the sanguinary exploits of Jourdan, and among the numerous victims of the reaction in 1815 no one was more illustrious than Marshal Brune, who was here assassinated. Twenty-one councils of the church were held in Avignon, from 1050 to 1725. The most important of these was that of 1209 against the Albigenses, that of 1326 against poisoners and sorcerers, and that of 1457, in which the crusade was discussed, proposed by Calixtus III. against the Turks, who had just taken Constantinople. The population of Avignon has diminished more than two-thirds since the era of its splendor in the 14th century. It then counted over 100,000 inhabitants, and it now has 85,890.

AVILA, a province of Spain, forming a part of old Castile. It has an area of 2,570 square miles, and a population (in 1849) of 182,986. The northern portion of the province is generally level, of moderate fertility, and the inhabitants are engaged in agriculture. The southern part is intersected by numerous rocky mountain ranges, with verdant valleys between. Here the raising of cattle is the most important branch of industry. Two centuries ago the province was wealthy and populous, but it has gradually decayed, in consequence of the burdensome manorial and feudal privileges, and the laws of entail and mortmain. Merino wool is the chief article of production.—AVILA, the capital of the province, an episcopal city, is situated on the Adaja, 58 miles north-west of Madrid; pop. 4,121. It had formerly a flourishing university, and extensive woollen manufactures, but its ancient prosperity has departed. The city is encompassed by a wall, still in good repair, with towers of great strength. It has a fine old cathedral, and a Dominican convent, both of which contain some beautiful monuments. The church of San Vicente, without the walls, said to have been erected in 813, is an interesting object. Avila is the birthplace of St. Teresa de Jesus, the patroness of Spain.

AVISON, CHARLES, an English musician and author, born in 1710, died about 1770. He was a pupil of Geminiani, whose style he successfully caught, officiated for many years as organist at Newcastle, and beside composing a number of concertos and sonatas for full orchestras and harpsichord, was the author and editor of several important works on music. He brought out the first English edition of Marcello's music to the Psalms, and wrote an essay on musical

expression, which, from his partiality for Geminiani and Marcello, to the neglect of Handel, excited a reply from Dr. Hayes, of Oxford, who attempted to show that Avison's knowledge of counterpoint was exceedingly superficial. Avison republished his book, with a reply to Dr. Hayes. His music is light and graceful, but deficient in force or originality.

AVLONA, a fortified town, and the best seaport of Albania, capital of the pashalic of the same name, situated on the gulf of Avlona. Pop. about 9,000. The Christian part of its inhabitants are chiefly employed in commerce. The Turks manufacture woollen fabrics and arms.

AVOCET (*recurvirostra*), a bird of the order of the *grallatores*. There is but one European and one American species, which are very closely connected, and would at first sight, by an unpractised eye, be pronounced identical. They are easily distinguished by the peculiar form of their long, slender bill, which is reflected upward at the extremity. It is webfooted, but does not swim easily or willingly, though it wades quite up to the breast, for which it is admirably qualified by its long legs, which are naked quite up to the head of the thigh. The principal use of the palmated webs of its feet appears to be the enabling it to stand and run, without sinking, over the soft mud and semiliquid ooze of the sea-shores, which it frequents. It feeds on aquatic animals, such as the smaller conchifers and mollusks, and on the spawn of fishes, which the peculiar form of its bill affords it peculiar facilities to gather. The American avocet, *recurvirostra Americana*, is thus described by Giraud in his "Birds of Long Island:" "Loral space, white; neck and fore part of the breast, reddish buff; lower parts, back, and tail, white; wings, black, with a broad band of white, formed by the tips of the secondary coverts. Lower portion of the tibia naked. Legs, blue. Length 18 inches; wing, 9. A few breed at Egg Harbor, where they are known as the "blue stocking." It builds its nest of sea-wrack and dried sedge among tufts of long grass by the edge of some salt pool. It is common in all parts of the United States, especially in the fur countries.

AVOIRDUPOIS (Fr. *avoir du poids*, to have weight; or, possibly, as it was formerly spelled *averdupois*, from the old Fr. verb *averer*, to verify), a standard of weight, to which articles of merchandise, sold by weight, are referred, except the precious metals, gems, and medicines. The pound avoirdupois contains 7,000 grains; the pound troy contains 5,760. The ounces do not retain the same proportions, there being 16 to the pound avoirdupois, and 12 to the pound troy. The ounce avoirdupois is supposed to be the same as the Roman *uncia*, which, according to Dr. Arbuthnot, contained the same number of grains, viz., 487½, but it is very unlikely these small weights have been preserved uniformly the same for so long a period. The old term avoirdupois is first

met with A. D. 1532, in some orders of Henry VIII.; and in 1588, a pound of this weight was deposited, by order of Queen Elizabeth, in the exchequer, as a standard. This, when examined, in 1758, by the committee appointed by the government, was found to be 1½ grain deficient in weight; and the troy weight was thereafter made the standard. The standard grain, prescribed by act of parliament in the reign of George IV., is such that "a cubic inch of distilled water weighed in air by brass weights, at the temperature of 62° Fahrenheit's thermometer, the barometer being at 30 inches, is equal to 252.458 grains."

AVOLA, a Sicilian city, 18 miles S. W. of Syracuse, on the coast; pop. 6,780. It was rebuilt after its destruction by the earthquake of 1693. The famous honey of Hybla is still produced in its vicinity. It has a tunny fishery, and a refinery for home-grown sugar.

AVON, a post-township of Livingston county, N. Y., 19 miles S. W. of Rochester; pop. in 1855, 2,694. The village is beautifully situated on a plateau above the Genesee. There are two mineral springs in the neighborhood, much resorted to by invalids in the summer season. The waters are considered particularly beneficial in cases of rheumatism, dyspepsia, and cutaneous diseases.

AVON, the name of several English rivers, the most important of which, Upper Avon, rises near Naseby, in Northamptonshire, and empties into the Severn, near Tewkesbury, after a course of about 100 miles. Stratford, the birthplace of Shakespeare, is situated on the bank of this stream, whence is derived his appellation of the "Swan of Avon."

AVONDALE, or AVENTDALE, a parish of Scotland, county of Lanark. It was in this county that, in 1697, Claverhouse was defeated by the Covenanters. A description of this battle exists in Sir Walter Scott's "Old Mortality." It is commemorated by a Gothic monument, 35 feet high, recently erected at the spot where it took place.

AVONMORE, Viscount (BARRY YELVERTON), Irish judge, born in the county of Cork, 1754, died in Dublin, Aug. 19, 1805. He was educated at the free school of Middleton, in his native county (which also sent forth his friend Curran some years later), and his scholarship passed him through Trinity college, Dublin. He was called to the bar in 1764. In 1776, having obtained a seat in the Irish parliament, he took the popular side in politics, and became a formidable opponent to the government. He warmly seconded Grattan's successful endeavor, in the session of 1782, to assert the legislative independence of Ireland, and immediately after (July, 1782) accepted the office of attorney-general. In 1788 Barry Yelverton was made chief baron of the exchequer, which office he continued to hold until his death. In 1795 he was created Baron Avonmore, and in Dec. 1800, was promoted to the dignity of viscount, gaining this step in the peerage by voting for the union.

a measure which he is said to have deeply regretted. He was a man of eminently social habits, and, in 1779, founded the convivial order of the Monks of the Screw, of which Curran was prior. His sympathies were with the liberal cause, of which Grattan, Curran, and many of his other friends, were champions—some of them martyrs also. His legal knowledge was large and solid. His eloquence was full of the vehemence of a masculine intellect. His enjoyment of wit was intense. His affections were warm and enduring. With all this, as Phillips truly says, "he was the complete Goldsmith of the bar—as inspired, as simple, and at times as absent." He is said to have prepared either a translation or corrected edition of Livy, which he was too timid to publish.

AVOYELLES, a parish of Louisiana, at the mouth of Red river, which intersects it, and also forms its west border. Area, 800 sq. miles; surface, nearly level, and subject to inundation. The western portion is fertile. The staples are sugar, cotton, Indian corn, and potatoes. In 1850 the productions were 8,588 bales of cotton, 810,985 bushels of Indian corn, 4,481 hogsheads of sugar, and 248,720 gallons of molasses. There were 8 churches, 2 newspaper offices, and 566 pupils attending public schools. Capital, Marksville; pop. in 1850, 9,326, of which 4,165 were free, and 5,161 slaves.

AVRANCHES, a town of France, in the department of the Manche, situated near the Séez, and within 3 miles of the sea, in lat. 48° 41' 28" N. and long. 1° 31' 32" E. It stands upon a hill looking toward the Obannel islands, and although old and mean, contains the remains of a fine cathedral, consecrated in 1131, and partially destroyed in the revolution, in which is shown the stone on which, in 1173, Henry II. of England knelt to do penance for the murder of Becket. The cheapness of living and attractive scenery of the town have made it quite a resort for English families. In the 14th century it came into the possession of the English, who retained it until 1450. Avranches has several public institutions, including a library of 10,000 volumes, and some manufactures of lace and blonde. Small vessels can approach the town. Pop. in 1851, 8,932.

AWE, Loch, a beautiful Scottish lake in Argyleshire, 8 miles N. W. of Inverary. It is 24 miles in length, and 1 in width, encircled by rugged and precipitous mountains, of savage grandeur, the loftiest (Ben Cruachan) 3,670 feet in height. Its surface is dotted with small islands, to the number of 24. On Inishail are the remains of a small Cistercian nunnery, and a church-yard containing many curious old tombstones. On Innis Fraoch are some traces of an ancient castle, formerly the residence of the chief of the M'Naughtons. Inish Chonnel was for several centuries the residence of the Argyll family. The castle of Kilchurn, whose square tower was built in 1440 by one of the Campbells, the founder of the Breadalbane family, stands on a rocky point of

land, near the head of the lake. It was garrisoned as late as 1745 by the king's troops, but is now deserted. Several small streams flow into Loch Awe, one of which connects it with Loch Avich, and another with Loch Etive, an arm of the sea. The lake is stocked with delicious fish, and is particularly celebrated for its trout and salmon, the former of unusual magnitude.

AWEIGH, in sea language, the posture of the anchor when it is drawn out of the ground in a perpendicular direction.

AWYAW, also AWAYE, or AGGAW-OJJAH, the capital of the kingdom of Yoruba in central Africa, with a population of about 25,000. In consequence of frequent wars, this town, like most towns of the Yoruba tribes, is surrounded by clay walls, about 5 feet high. The streets are narrow and crooked, and the town with its thousands of low, broad, grass-thatched houses, peeping above the wall, and sweltering in the torrid sun, presents a singular and striking appearance. There are no public buildings except unseemly little temples. The home of the king differs from others only in size, and in high sharp gables called *kobbi*. The market forms a large area shaded with trees and surrounded with little open sheds. Here the women pass the whole day, laughing and chatting the time away, and trying to sell their various wares. Some of the sheds are occupied by barbers, leather-dressers, engravers, and other artisans. Every fifth day there is a large market, when the town presents a still more merry and animated appearance. The houses are built of clay or mortar—only one story high, but containing a great number of dark little rooms. The gate of each house is furnished with amulets against evil spirits. This town has been visited of late years by American missionaries connected with the Yoruba mission.

AX, a town of France, department of Ariège, on the Ariège. It is celebrated for its thermal springs, temperature from 75° to 170° F. Of these it has more than 30. Pop. 2,000.

AXAYACATL, Mexican emperor, died about 1477. He was the father of Montezuma, celebrated in the conquest by Cortes, and reigned 14 years. Being a contemporary of Nezahualcoyotl, the prince of Tezouco, and the greatest monarch that ever sat upon a Mexican throne, he was never able to obtain the wide power which his son acquired. He was already famous as a warrior when he became emperor of the Aztecs, and inaugurated his reign by a successful expedition against Tehuantepec, and in 1467, conquered anew the cities of Cotasta and Toch-tepec. A little later he repelled the tribes who strove to get possession of the Mexican capital, and maintained a vigorous warfare against his neighbors. It was in his reign that 50,000 Indians brought from the mountains of Ouyocan an enormous rock, which, after being covered with bas reliefs, served as the lower altar in the great temple of Mexico. He was defeated by the natives of Michoacan, whom he at-

tacked with inferior forces, and on his return to Mexico, celebrated funeral solemnities. He was preparing another expedition, when he died suddenly and prematurely. The palace of Axayacatl, a gigantic pile of stone buildings, became 50 years later the barracks of the Spaniards. His treasures, too, the fruit of long and careful hoarding, were discovered by Cortez, within a concealed door, and the chronicler of the conquest exclaims that "it seemed as if all the riches in the world were in that room." They consisted of gold and silver in bars and in the ore, many jewels of value, and numerous rich and beautiful articles of curious workmanship, as imitations of birds, insects, or flowers.

AXE. The axe is one of the earliest tools suggested by the needs of man. The savage, whose first step is to provide himself with a shelter from wind and weather, needs some other aid than his own brute strength to supply materials for his hut, to shape his canoe, or to fell and hue the harder trees that supply arms and utensils; and accordingly, among all antique relics, we find almost invariably some species of axe; the bone and flint tool of different Indian races, the metallic axe, mixed copper and tin, of South America and Mexico, sufficiently hard to cut porphyry and granite, the similar tool of the Romans, the Druidical copper axe, with the rough iron instrument of northern nations, all witness the primitive use of this implement. The increased science of more recent times constructs the axe of iron edged with steel; but anciently the use and combination of these metals was comparatively unknown. The Egyptians, Mexicans, and Peruvians, although possessed of iron in the ore, ignorant of its uses, combined other metals for weapons and tools, producing almost the hardness of steel by processes whose secret, since lost, has never been rediscovered by Europeans. With the progress of civilization, the increasing wants of the race, and the colonization of new and fertile countries, the use of axes has proportionably increased, with that of various other edge tools, under which generic name axes are classified as a variety. In the mahogany regions of Honduras and Yucatan, in South American forests, in the primeval woods of North America, in the jungles and thickets of eastern India, in the pine forests of Europe, and the teak groves of Burmah and Pegu, the laborer, of whatever race, is most usually supplied with tools from some quiet manufacturing village thousands of miles from his work. In the most recent American processes, the iron used in making axes is hammered bar-iron, the bars of different lengths, but definite sizes, differing for different tools; it is heated to a red heat, cut of the requisite length, and the eye which is to receive the handle punched through it; it is then reheated, and pressed between concave dies till it assumes the proper shape. The Spanish axe is made by the old process of hammering out the bar and turning it in a loop to make the eye, as this kind of axe has no head. The axe is now

heated and grooved upon the edge, receiving in that groove the piece of steel which forms the sharp edge; borax is used as a flux, and at a white heat the axe is welded and drawn out to a proper edge by trip-hammers. The next process is hammering off the tool by hand, restoring the shape lost in drawing out; it is then ground to form a finer edge, and the head; and shaved down to its final symmetry. After this it is ground upon stones of finer grain than before, and is ready for the temper. The axe is now hung upon a revolving wheel in a furnace, over a small coal fire, at a peculiar red heat, judged by the eye; is cooled in salt and water, then in fresh water, and removed to another furnace, where it receives the last temper, the degree of heat being regulated by thermometers. Then it is polished to a finish that shows every flaw, and enables it to resist rust, and enter wood easily; next it is stamped, the head blacked with a mixture of turpentine and asphaltum, to prevent rust, and is weighed, labelled, and packed for sale. Formerly the consumer depended upon the rude forges and limited skill of blacksmiths to supply axes, but since the increased demand, there are many small manufactories in different parts of Europe and America.—The largest establishment in the world for manufacturing axes and edge-tools is that of the Collins Company, situated on the Farmington river, at Collinsville, Connecticut. Here, by means of machinery invented for the company by Mr. E. K. Root, the processes of axe-making are brought to extreme perfection. The establishment was begun in 1828, on a small scale, by Mr. S. W. and Mr. D. O. Collins. After some years it passed into the hands of a company, known now as the Collins company. The amount of capital invested here is \$300,000. Twelve hundred tons of iron, 200 tons of cast steel, and 2,000 tons of coal, are consumed annually; from 850 to 400 men are employed; 18 large water-wheels supply the motive power of the machinery, and from 1,500 to 2,000 tools are made daily. The two largest American manufacturers after the Collins co., are Hunt of East Douglas, Mass., and Simmons of Cohoes, N. Y.

AXEL. See **ABSAŁON**.

AXINITE, a mineral occurring in flat, prismatic crystals, with sharp edges, like an axe. It consists chiefly of silica, alumina, lime, and oxide of iron.

AXIM, a town of Africa, coast of Guinea, belonging to Holland, which power maintains there a garrison of 500 well armed men. Until the year 1642 it was occupied by the Portuguese, when it was taken from them by the Dutch, who were confirmed in their possession by the treaty of Westphalia.

AXIOM, an ancient philosophical term, first employed by mathematicians to designate principles which are immediately and entirely evident, and which serve as the foundation of all their demonstrations. Such propositions are these: "The whole is greater than any one of its parts;" "The whole is equal to the sum of

all its parts;" "Two things, each of which is equal to a third thing, are equal to each other." In a more extended sense, the axiom came to mean any self-evident and indisputable truth, such as the following: "Whatever is, is;" "The same thing cannot at the same time exist and not exist." All sciences, whether physical or moral, have their axioms, which state actual or conventional truths, and are the formulas or enunciations of their fundamental principles. They are the bases upon which the different parts of a science rest, the principles held in common in discussions, and from which all the consequences are to be derived; for, according to an axiom of logic, whoever admits a principle, admits its consequences.

AXIS, in geometry a line around which the parts of a figure are symmetrically arranged: thus, the line from pole to pole, in the earth, is the axis of the earth; and the shortest and longest diameters of an ellipse are the axes of the ellipse.

AXIS IN PERITROCHIO, an old term for a wheel and axle.

AXLE, a piece of timber or a bar of iron which supports the body of a car, carriage, or wagon, and is itself supported on two wheels in the hubs or naves of which its ends are inserted. A great change was introduced some 30 years ago, in the shape of axles for carriages, by the English invention of air-tight closed boxes, which with slight modifications has been adopted all over the world. The wheels of carriage axles are prevented from falling out by means of a collar on the axle, which enters the hub on the inside, and not by a nut and pin on the outside, as usual in common vehicles. The adoption of railroads has made another change necessary. Axles for railroads, instead of revolving in the hubs of the wheels, are strongly keyed in them, and journals are turned on the portions outside the wheels. These journals pass through and revolve in boxes attached to the frame of the cars. This arrangement has been found to resist vibrations and jerks resulting from high velocity, much better than the old plan. It was, moreover, necessary to insure a distance invariably equal to that of the rails, between the rims of the wheels. It has been lately attempted to divide axles in the centre, both in England and in the United States. The ends of the two half axles that meet are maintained in boxes fixed in slides on a frame, and the body of the carriage acts as a lever on a small mechanism, and brings each axle perpendicular to the curve of the road. The English inventor proposes to divide carriage axles in order to turn short curves without bringing one of the front wheels under the carriage, and thus to allow the use of large wheels for both axles. The improvement of Morse and Mansfield, the American inventors, is for railroad cars. It is intended to prevent the sliding of one wheel in curves, and to keep each wheel parallel to the rail. This invention has been tried on several railroads of New England, the several engineers

of which have reported that it makes a great saving in the wear and tear.

AXMINSTER, a town in the county of Devon, England, 147 miles from London, chiefly known on account of the very beautiful carpets which have been made there of late years; and which are woven all in one piece. The town is mentioned in Domesday book, and is believed to have existed from very early times, as King Athelstan made a grant to 7 priests there to pray for the souls of certain earls and others slain in battle with the Danes. An action was fought near Axminster in the civil wars in 1644.

AXOLOTL, the Mexican name of an amphibious reptile, described by naturalists as *siredon*. This tadpole-formed reptile has the vertebræ biconcave, and the body elongated and formed for swimming. The feet are 4, the anterior being four-toed, the posterior, five-toed; the sides of the body are marked by several small furrows, and an imperfect lateral line is continued from the gills to the tail. The head is flattened, with a rounded or truncated snout, near the end of which are the nostrils; the eyes are small, and about midway between the angle of the mouth and the nose; the tail is elongated and compressed, and tapers to a point; a thin membrane commences near the back of the head, rising gradually to the middle of the tail, and diminishing again toward the tip; underneath, it extends from behind the vent to the tip, reaching its greatest height at its anterior third. It belongs to the perennibranchiate order, or those whose gills remain through life, coexisting with rudimentary lungs, hence its respiration is always aquatic. The gill-openings are large, and the gill-covers are continuous beneath the throat, so as completely to separate the head from the breast. The gills consist of 4 semicircular cartilaginous arches, serrated internally, like those of fishes, and externally provided with fine branchial fringes, occupying thickly the lower edge of the flaps, and a few on the tip of the upper edge. The fringes are flattened, tapering, and disposed in a double row. A generic character is the presence of 4 external flaps, provided with respiratory fringes. The mouth is provided with 2 rows of teeth in the upper and lower jaw. The larval character of this genus is shown by the opercular flap not being attached to the integuments, and being free to the extremity of the chin—in this differing from many other perennibranchiates. There are 8 species described, *siredon Mexicanus*, Shaw; *S. maculatus*, Owen; and *S. lichenoides*, Baird. It is probable that other species exist, as there are many localities in Mexico, New Mexico, and Texas, where "fish with legs" are common. The axolotl is about 10 inches long, of a dark brown color, with blackish spots. Great numbers are taken in the month of June from a lake about 3 miles from the city of Mexico, at an elevation of more than 8,000 feet above the level of the sea, and from water whose temperature is never below 60° F. At this time they are so abundant that they

form the principal food of the peasantry. They may be seen in the markets by thousands, and almost every native will have a string of 60 or 70. The fact of their being eaten by the Mexicans was long ago mentioned by Humboldt.

AXTEL, **DANIEL**, an English colonel and commonwealth's man who played an important part under the protectorate of Cromwell. He was originally a grocer. He was a staunch republican, and was one of the regicides. He crossed over in Cromwell's train into Ireland, received the government of Kilkenny, and put down the royalists. After the restoration (1660) Axtel was one of the 52 excepted from the general amnesty and condemned to death. He was hanged at Tyburn, Oct. 19, 1660. His head was set up on Westminster hall, and his limbs exposed in other places.

AXUM, or **AKSUM**, or **AXOOM**, a city, and once the capital, of the province of Tigre, in Abyssinia. Parkyn visited this city in 1843. There stands in it a church considered the most sacred building in all Abyssinia, "around which lie scattered unfinished or broken columns, pedestals, and other remnants of the civilization of former ages." This church is about 200 years old. There were originally 55 obelisks at Axum. One of the most remarkable of these, a single shaft of granite, 60 feet high, is still standing in good preservation. It is destitute of hieroglyphics, and instead of ending in a pyramid like the Egyptian obelisks, terminates in a kind of patera, indicating that it is of Greek rather than of Egyptian origin. Tradition says it was erected in the time of the emperor Aizanas (A. D. 300). Axum has become important in archaeology by the discovery of a stone (Axumitic marble) having on one side inscriptions in Greek, and on the other, according to the traveller Salt, inscriptions in Ethiopic, so effaced that he could copy but a small part of them. They appear to give a list of kings whom some Abyssinian monarch had conquered. The stone, if it be genuine, hints at the existence of an extensive and powerful empire in Abyssinia, where arts and arms were well known and cultivated. In ecclesiastical history there is preserved a letter of Constantius, addressed to Aizanas and Sazanas jointly, calling them the "Axumite princes." This stone also gives the name of the Abyssinian monarch as Aizanas, and mentions Sazanas. Axum was probably the first place in Abyssinia into which Christianity was introduced. It was formerly the centre of the ivory trade. It has now about 600 houses.

AYACUCHO, a department in the republic of Peru; pop. 181,921. Near its chief town, also named Ayacucho, the battle was fought which finally secured the independence of Spanish South America. After the battle of Junin (Aug. 6, 1824), the Spanish viceroy, Gen. La Serna, attempted by manoeuvring to cut off the communications of the insurgent army, under Gen. Sucre. Unsuccessful in this, he at last drew his opponent to the plain of Ayacucho,

where the Spaniards took up a defensive position on a height. They numbered 18 battalions of infantry, with artillery and cavalry, in all 9,810 men. On Dec. 8, 1824, the advanced guards of both armies became engaged, and on the following day Sucre advanced with 5,780 men to the attack. The 2d Colombian division, under Gen. Cordova, attacked the Spanish left, and at once threw it into disorder. The Peruvian division on the left, under Gen. Lamar, met with a more obstinate resistance, and could make no progress until the reserve, under Gen. Lara, came up. The enemy's retreat now becoming general, the cavalry was launched in pursuit, dispersing the Spanish horse and completing the defeat of the infantry. The Spaniards lost 6 generals killed and 2,600 killed, wounded, and prisoners, among the latter the viceroy. The South American loss was 1 general and 808 officers and men killed, 520 wounded, among them 6 generals. The next day Gen. Canterac, who now commanded the Spanish army, concluded a capitulation, by which not only he and all his troops surrendered prisoners of war, but also all the Spanish troops in Peru, all military posts, artillery, and magazines, and the whole of Peru, as far as they still held it (Cuzco, Arequipa, Puno, Quilca, &c.), were delivered up to the insurgents. The troops thus delivered up as prisoners of war amounted in all to nearly 12,000. Thus the Spanish dominion was definitively destroyed, and on Aug. 25, 1825, the congress of Chuquisaca proclaimed the independence of the republic of Bolivia.—The name *Ayacuchos* has in Spain been given to Espartero and his military partisans. A portion of the military camarilla grouped around him had served with him in the war against the South American insurrection, where, beside by military comradeship, they were bound together by their common habits of gambling, and actually pledged themselves to support each other politically when returned to Spain. This pledge they have honestly kept, much to their mutual interests. The nickname of *Ayacuchos* was conferred on them in order to imply that Espartero and his party had materially contributed to the unfortunate issue of that battle. This, however, is false, though the report has been so assiduously spread that even now it is generally credited in Spain. Espartero not only was not present at the battle of Ayacucho, but he was not even in America when it happened, being on his passage to Spain, whither Viceroy La Serna had sent him with despatches for Ferdinand VII. He had embarked at Quilca, June 5, 1824, in the British brig *Tiber*, arriving in Cadiz Sept. 28, and at Madrid Oct. 12, and again sailed for America from Bordeaux on that very same Dec. 9, 1824, on which the battle of Ayacucho was fought. (See Don Juan Segundo Florez, *Espartero*, Madrid, 1844, 4 vols., and Principe, *Espartero*, Madrid, 1843.)

AYALA, **PEDRO LOPEZ DE**, a mediæval poet, chronicler, and soldier, of Spain, born at Murcia, in 1332, died at Calahorra in 1407. His

was, says Mr. Ticknor, one of the first Spaniards of his age; held high offices in the kingdom under successive monarchs, was one of the supporters of the unfortunate Henry of Trastámara, and at the battle of Naxera, in 1867, where he bore the banner of that prince, was made prisoner by Edward, the Black prince, and carried to England. He there wrote in prison his poem of *Rimada de Palacio*, or "Rhyme of the Court." At length, having obtained his liberty, he returned to Spain, and held the office of first minister of state, until, in 1885, he was again taken prisoner in the battle of Aljubarotta, and had to endure another tedious captivity in Portugal. He was one of the last of those historians, so popular in the middle ages, under the name of chroniclers, and, as might be expected from a man learned in philosophy as well as history, he lacks something of the vivacious simplicity and poetical credulity which give a charm to the narratives of the older chroniclers. His chronicle begins at 1850, where that of Alfonso XI. ends, and embraces 46 years, thus recording the events of the 4 wild reigns, in which he himself mingled in public affairs. It is a cool and minute narrative, and approaches more nearly than any of its mediæval predecessors to the judicious spirit and style of modern histories.

AYAMONTE, a city of Spain, in the province of Huelva, situated on the Guadiana, about 2 miles from its mouth. The town is strongly fortified, but difficult of access, owing to the bar at its mouth. The inhabitants are chiefly engaged in the fisheries, particularly for sardines, tunny, and cod. Pop. 4,675.

AYAN, a town on the eastern coast of Siberia, in lat. 56° N., and long. 138° E., about equidistant from the larger town of Okhotak and the mouth of the Amoor river. It contains some forty houses, and between 300 and 400 inhabitants, Russians, Cossacks, Germans, and Toun-gouse Indians, and is the chief station of the Russian fur company in that part of the country. It has a Greek church and a small ship-yard. The port is rarely visited, save by whalers and the company's ship, which carries a load of furs to Europe annually. The houses are built of huge pine logs, smoothly planed, and fitted tightly together, the interstices being carefully calked and puttied. They usually consist of but a single story, and some of them cover a great deal of ground. Each room has an immense fire-place and double windows. The latter are placed about six inches apart, having between them a brick, on which is kept a pile of table salt, to absorb the moisture entering from without. Dogs are used in hundreds, for travelling in winter, and carefully fed and sheltered in summer. They are watched by keepers through the day, and locked up at night in a large log house. When the snows set in, the horses and reindeer are turned loose to shift for themselves, in large droves; they wander about the country, obtaining sustenance by digging down through the snow, and, by their united

strength, secure against the attacks of wild beasts. It is only necessary to feed them in the spring, when the snow thawing and then freezing again, forms a covering to the earth of solid ice. No sheds are erected to shield them from the cold; and though the mercury sinks in the centigrade thermometer to 25° below zero, they are rarely frozen, as the air is perfectly still and free from moisture. The government post makes the overland trip from St. Petersburg, in about 60 days. Teas, wines, sugar, and tobacco, are brought by the land route, sewed up in raw hides, and the finer furs (some of which bring from 300 to 800 dollars apiece) are sent home in the same manner. (See Lieut. Habersham's "My Last Cruise," 1857.)

AYASOOLOOK, written, also, AYASALOUK, and AJASALUK, a village of Asia Minor, on the site of the ancient Asiatic Greek city of Ephesus, with a mosque, castle, and aqueduct, constructed out of the ruins of ancient Ephesus. Here have been found the remains of the great temple of Artemis, called in the English translation of the Scriptures, Diana of the Ephesians. Lat. 37° 55' N., long. 27° 20' E.

AYCINENA, MARIANO, styled, also, marquis of Aycinena, descended from an old Spanish family of noble blood, was elected governor of Guatemala, Central America, March 1, 1827, by the monarchical or servile party of that state. His administration was signalized by the organization of a military tribunal for judging political offences in a summary manner, the proceedings of which were, to the last degree, oppressive and bloody. They so far excited the indignation and alarm of the neighboring states, as to lead them to unite, in a league, to put down the "military inquisition." This was effected under the leadership of Gen. Francisco Morazan, who captured Guatemala, April 12, 1829, and deposed Aycinena and his adherents, who, on Aug. 22 following, were banished from the country by act of the federal congress. They were obliged to return the money which they had secured on account of their salaries, and a third part of their property was confiscated for the benefit of the state; and the relief of the victims of the "military inquisition." A number never returned; but with the downfall of Morazan, Aycinena came back, and took an important, if not an open part, in the events which resulted in constituting Carrera president for life (*Presidente Vitalicio*) of Guatemala.

AYER, PERER, one of the founders of the society of Shakers, at the Shaker village, Canterbury, N. H., born 1760, died there, Sept. 14, 1857, aged 97. He was a powerful, athletic man, and served in the revolution previous to his becoming a member of the Shaker fraternity, with which he was connected upward of 70 years.

AYESHA, or AISHA, the favorite wife of Mohammed, born at Medina in 611, died 678. She was the daughter of Abubekr, and was but 9 years of age when she was betrothed to the prophet. She is reputed by Arabic writers

as both beautiful and gifted; and they have not scrupled to give to a daughter of the desert a knowledge of mathematics, eloquence, music, and other arts. The 24th chapter of the Koran was written by the prophet expressly to silence those cynics who doubted Ayesha's purity and virtue. She survived Mohammed 40 years, and has been held in greater veneration by the succeeding generations, than possibly she was by her contemporaries. She was a good hater, and her enmity to Ali was the cause of infinite troubles in the Mohammedan world. She was taken prisoner by him on one occasion, arms in hand. Her opinion was sought sometimes on difficult points in the Koran, and had the force of law with good Soonnees.

AYIN AKBARI, a statistical work, written by Abul Fazl, the able vizier of the great Mogul emperor, Akbar. It contains an account of the Mogul administration, showing the manner in which the different departments of government were managed; it also gives an account of the various provinces of the empire, and of the ancient literature, institutions, and religion of the Hindoos. The work must have cost great labor and attention; it is one of the greatest interest and utility, as important to the history of India as the famous Domesday book to that of England. As a commendable instance of patient research into the habits and institutions of a people by a foreign ruler, amid the harassing and multifarious concerns of government, it is perhaps unsurpassed.

AYLESBURY, a market-town, parish, and parliamentary borough, the county seat of Buckinghamshire, 89 miles N. W. of London. Pop. of the parish, in 1851, 6,081; of the borough, 26,794. It returns two members to Parliament. It is a very old town, irregularly built, but well paved, and lighted with gas. Several of its public buildings are handsome edifices. Straw plaiting is extensively carried on, and ducks are raised in great numbers for the London market. The manufacture of lace has diminished greatly of late years. There is one silk factory in the place.

AYLESFORD, a village of England, in the county of Kent, on the river Medway, 83 miles S. E. from London. Population of the parish, in 1851, 1,487. West of the village near the river, stood a Carmelite friary, founded in 1240. Its remains are still visible in the residence of the earl of Aylesford. Its most interesting relic of antiquity is the cromlech called Kitscoty house, on a hill north-east of the village. It is supposed to cover the remains of Catigern, who was slain here in a battle between the Britons and Saxons, A. D. 455.

AYLLON, LUCAS VASQUEZ DE, a Spanish adventurer, who, in 1509, occupied the position of counsel at the supreme court of St. Domingo, and was subsequently employed by Fernando Cortes, on a mission to Velasquez. In 1520, he joined an expedition to Florida, treacherously captured a great number of natives, and proposed to found a new colony, but was unsuc-

cessful, and is supposed to have lost his life while engaged in a second expedition to Florida.

AYLMER, JOHN, bishop of London, born at Tilney, in Norfolk, in 1521, died June 8, 1594. He was sent to Cambridge by the marquis of Dorset, afterward duke of Suffolk, but graduated in divinity at Oxford, after which he became the duke's chaplain and tutor to his daughter, the unfortunate Lady Jane Grey. On the accession of Queen Mary, in 1553, Aylmer was compelled to give up the archdeaconry of Stow, in Lincolnshire, to which he had just been appointed, and, as a member of convocation, having voted against the return to Popery, which many of the clergy favored, had to fly for safety to Switzerland. In his exile he published a reply to John Knox's "First Blast," against the propriety of women holding the sovereign sway, and greatly complimented Elizabeth, who then wore the crown. Returning to England, Aylmer manifested much zeal in favor of the reformed faith, and was made archdeacon of Lincoln in 1562, and was a member of the synod which reformed and settled the doctrine and discipline of the Anglican church. He was made bishop of London in 1576, and, in this capacity, became generally so unpopular, on account of his active intolerance toward the Catholics and the Puritans, that frequent complaints against him were made to the privy council, by whom he was repeatedly rebuked for his severity, and on one occasion, commanded to compensate the complainant to avoid an action for damages for false imprisonment. He was a ripe scholar and a popular preacher, but published nothing except his courtly answer to John Knox.

AYLOFFE, SIR JOSEPH, an English antiquary, born in 1708, died 1781. He began the translation of the *Encyclopédie* of Diderot and D'Alembert, but the enterprise fell to the ground.

AYMAR, JACQUES, a peasant of Dauphine, who made a prodigious sensation in France in the latter part of the 17th century, through his pretended skill in divination. He was born at St. Veran, Sept. 8, 1662, and was originally a mason. He soon abandoned that occupation, and began using the divining rod, employing it at first in discovering springs, mines, and hidden treasures, and finally in reclaiming stolen property and in detecting the thief. He acquired a great reputation in this way, and at length in 1692, a vintner and his wife having been murdered at Lyons, he was employed to follow up the murderer, and finally charged the crime upon a hunchback in the jail at Beaucaire, who confessed his complicity, and was broken on the wheel. The country rang with these wonderful events, and innumerable pamphlets were written on the subject in 1692 and 1693. Aymar was invited to Paris by the prince de Condé, to display his skill, but failed most completely in every thing he attempted, and at length admitted that he was an imposter. The mystery

of the hunchback was never cleared up. If guilty, Aymar probably was cognizant of his guilt beforehand.

AYR, a royal burgh and county town in Scotland, at the mouth of the river of the same name, which runs into the frith of Clyde, 77 miles from Edinburgh. Population in 1851, 9,115. There is a harbor with two piers, each about 1,200 feet long; vessels of 200 tons can cross the bar. The town was a place of note at the Norman conquest, and was chartered by William the Lion, king of Scotland, in 1202. About 2 miles from the town stands the house in which the poet Burns was born.

AYRER, JAKOB, a German poet, who flourished at Nuremberg, in the time of Hans Sachs, toward the end of the 16th century, and died in 1605. He is the author of about 70 comedies, tragedies, burlesques, and carnival plays, which were published in 1618, in Nuremberg, under the title *Opus Theatricum*. Tieck inserted 5 of these plays in the first volume of his *Deutsches Theater*. He had a peculiar style of versification, but, on the whole, was greatly inferior to Hans Sachs.

AYRES, JOHN, an English penman and arithmetician, born at the end of the 17th century, died about 1750. His "Arithmetic Made Easy" (1694), dedicated to the Lord Mayor of London, was as popular as Cocker in the last century; a 12th edition appeared in 1714.

AYRSHIRE, a county in the S. W. of Scotland; population in 1851, 189,858. It is hilly on the southern and eastern sides, the principal hills rising to nearly 2,000 feet. It is intersected by several small rivers. Off the coast lies the Craig of Ailsa, the top of a submarine mountain with basaltic columns similar to those of Staffa. The county abounds in coal, particularly that known as blende coal, which is found in the state of coke, iron, lead, antimony—and various kinds of building stone are also found; there is also a granite valued for mill stones, and a black stone used in building ovens on account of its power in resisting fire. The progress of agriculture has nowhere been more marked than in Ayrshire. The county is remarkable for its fine crops and for the general prosperity of its farmers. The manufactures are considerable in linens, woollens, cottons, leather, and other articles to which the example of the great factories of Paisley and Glasgow have given considerable stimulus. The relics of antiquity, Druidical, and Roman, are numerous, while the ruins of castles, religious edifices, and other middle age structures, plentifully dot the county. One of the most notable of these in point of interest, is the ruins of Turnberry castle, the ancestral residence of the Bruce, which was seized and occupied by the English, and recovered by himself. At Alloway, near Ayr, is the ruined kirk in which Tam O'Shanter had his midnight vision. The religious tenets of the country people subjected them to persecution in the time of Charles and James II., and monuments of the martyrs in the cause of

the covenant are to be found scattered over the country.

AYSOUÉ, SIR GEORGE, born about 1616, died about 1676, of an ancient Lincolnshire family. He entered the navy early, and was knighted by Charles I. In the civil war, siding with the parliament, he had command, as admiral, in the Irish seas. In 1651, he reduced Barbadoes and Virginia, which had held out for the king. In 1652, he gallantly seconded Blake in his great victory over Van Tromp, the Dutch admiral. After the restoration he was promoted, and did further good service in the war with the Dutch. In June, 1666, in the memorable naval battle of the four days, he commanded a squadron, but his ship (the Royal Prince, the largest ship then afloat) running on the Galoper sands, his men forced him to surrender, and the Dutch captured his vessel. He returned to England, after a captivity of some years, but retired wholly into private life.

AYTON, SIR ROBERT, a Scottish poet, and private secretary to the queens of James I. and Charles I., was born at Kinaldie, in Fifeshire, in 1570, died in the palace of Whitehall, March, 1688, buried in Westminster abbey, where he has a monument. When James VI. of Scotland became king of England, a very eulogistic Latin poem on the occasion was Ayton's courtly offering, and his adulation was rewarded by knighthood, and several lucrative offices, which kept him personally intimate with the king. His Latin poems, chiefly panegyrical, were published in his lifetime, and much esteemed. His English poems, principally preserved by tradition, were scarcely known until the Balclyne club at Edinburgh printed a collection of them in their "Miscellany." But, some years ago, a manuscript containing Ayton's poems was picked up at a sale, and the whole, edited by O. A. Pryer, were published in 1844. Burns greatly admired such of Ayton's poems as he had seen—among them the original of "Auld Lang Syne." Ayton was intimate with Ben Jonson and the leading literary men of his time.

AYTOUN, WILLIAM EDMONDSTOUNE, a Scotch professor, essayist, and poet, born in the county of Fife, in 1813. He was of noble birth, and was educated in the schools of Edinburgh, where he gained distinction for his superior compositions both in English and Latin, and both in prose and verse. A prize poem named "Judith," which he recited before the moral philosophy class in 1831, received the applause of Professor Wilson, encouraged by whom he published his first volume, entitled "Poland, and other Poems," which attracted but little attention. Mr. Aytoun devoted himself to legal pursuits, was called to the Scotch bar in 1840, and became well known as one of the wits at court and as an advocate in criminal cases. In 1845 he was elected to the professorship of rhetoric and belles-lettres in the university of the capital, and the lectures which he delivers there to

the students are celebrated for their pithy treatment of topics and their brilliant and finished style. He abandoned the liberal political views toward which he tended in his youth, and since the death of Professor Wilson has been the most prominent among the contributors to "Blackwood's Magazine." In this periodical first appeared those minstrel-like and enthusiastic national ballads since issued in the volume of the "Lays of the Scotch Cavaliers." They have been widely read, and by their lyric fervor and power show both the author's talent and his sympathy with the heroism of the royalists in the time of the Jacobite troubles. Professor Aytoun lectured with great success in London, in 1853, upon poetry and dramatic literature, and subsequently published "Firmilian," a mock spasmodic tragedy, designed to ridicule the raptures of some of the young poets of the day, and to satirize the pompous and vapid judgments of certain critics. He also took part in the "Book of Ballads," edited under the pseudonyme of "Bon Gualtier." His last poem was "Bothwell," published in 1856. He is one of the most effective of British political writers, and in reward for his services to the conservative party, he was, in 1852, appointed by Lord Derby to the offices of sheriff and vice-admiral of Orkney.

AYUNTAMIENTO, the name of village and town councils in Spain. During the wars between the Moors and Christian Spaniards it was the policy of the sovereigns to induce inhabitants and cultivators to settle in the depopulated country as fast as it was recovered. As an incentive, they granted to the villages and towns municipal privileges of a character derived from Roman antiquity, and totally antagonistic to the spirit of the feudal law, inasmuch as they made the citizens perfectly free, and were calculated to foster a vigorous and deep-rooted love of liberty. The town councils were to be composed of the judge, the mayor, the regidores or clerks, the jurados, and the personeros or deputies; all these were elective offices, except the judge or corregidor, who was appointed by the king. The only qualification for a citizen was Spanish birth, residence, and to be the head of a family. These privileges were consonant with the most ancient rights of the Spaniards and their Gothic conquerors, but now they were confirmed by fueros or charters. The only liability under which the districts thus organized were placed, was that of paying a tax to the king, and of serving in arms in defence of the country, under their own alcalde. Their elections were by ballot; persons soliciting a vote or using undue influence were disfranchised. The king himself might not interfere with the proceedings of the ayuntamiento, which had supreme control of all local expenditure and taxation. All the citizens in these districts had equal rights. Noblemen had to lay aside their rank and exclusive privileges, if they desired to reside in the district. There were no special privileges; all men and all religions were equal before the law. These admirable regulations continued in full force for

many years. But the civil wars of Spain loosened the bonds of society; and encroachments were made by various monarchs on the fueros of the towns. For instance, John II., in the 15th century, established a perpetual ayuntamiento in Toledo, whose members were appointed by the crown. The cortes to which the ayuntamiento had the right of sending deputies, remonstrated against these encroachments; but as the powers of the monarchs of Spain increased, the desire to exercise despotic control over the cities also increased. At the period of the French invasion, while the municipal organizations of the villages and unimportant towns had preserved their integrity, the charters of most of the great towns and cities of the kingdom had been at one time or other violated, and the rights of the people abridged. After the French evacuation, and the formation of a national government, the constitution of 1812, recognizing and restoring all the ancient fueros, was adopted by the people. The resistance to the plans of Napoleon had been, in fact, their work, not that of the court or of the higher orders. Ferdinand VII., on his restoration in 1814, refused to ratify the constitution of 1812. This breach of faith led to the civil war of independence. The attachment of the northern part of Spain, and especially of the Basque provinces, to the cause of Don Carlos, was owing to his respect for their ancient charters. After various changes, the constitution of 1812 was renewed in 1837. In 1840, in consequence of the check which this system of local government gave to the policy of the court, Queen Christina, by the advice of Louis Philippe, introduced a measure intended to restrain the political action of the ayuntamientos. This, although it at the time led to serious disturbances, was substantially carried out in 1844.

AZAIS, PIERRE HYACINTHE, a French philosopher, born at Sorrèze, in the south of France, March 1, 1766, died at Paris, Jan. 22, 1845. The father of Azais was professor of music at the college of Sorrèze, established by the Benedictine order of monks. Azais entered this college at the age of 6, and remained in it until 16. His favorite studies were natural history, physical science, and music, to the neglect of Greek and Latin, for which he had no strong attraction. At 16, he removed to Toulouse, where he entered the school of the religious order of *Oratoriens*. He remained there a year, when he became a teacher in a school at Tarbes, in the Pyrénées. The bishop of Oleron also made him his private secretary, and wished him to take orders as an ecclesiastic; but not willing to become a priest, and undecided what profession to adopt, he became organist at the abbey of Villemagne, for some time, and then private tutor to the sons of a nobleman in the neighborhood. When the revolution of 1789 broke out, his sympathies being democratic, he left his aristocratic patrons, after a 7 years' residence in the chateau,

and returned home. His father was then living at Bagnères, where his wife's brother, Gen. Darnaud, was commanding officer of the department of the Hautes Pyrénées. After the death of Robespierre, young Azais was appointed secretary of the administration of the district of Bagnères; but his thoughtful turn of mind rendered him unfit for business, and he resigned the office within a year. Political parties ran high, and he was somewhat harassed by his adversaries. At length he established a school at Gaillac, where the municipality offered him the former college of the Jesuits. His political friends were then in the ascendant; and he wrote a pamphlet called the "Legislator of the year V," for which he was condemned to banishment, some years later, when their adversaries came into power. He fled to Toulouse, and from there to Tarbes, where he was concealed in the house of a friend; but was soon denounced and obliged to seek another refuge. He was privately conducted by night to the hospital of the same city, in which the patients were under the care of the sisters of charity, and there he was established quietly as secretary and bookkeeper of the hospital. There he wrote his "Discourses of the Soul with the Creator," and his "Religious Inspirations, or the Elevation of the Soul to the Spirit of God." In these works he first put forth his ideas of eternal justice, and the natural and necessary balance of good and evil in the universe and in the destinies of men. After remaining 18 months concealed in this hospital, he retired to Saint Sauveur, a pleasant village at the foot of the Pyrénées, and there wrote his book on the "Misfortunes and the Happiness of Life." In this locality he remained 6 years, engaged in writing his celebrated philosophical "System of Compensations," which has given him a name in the world. He then went to Paris, and became acquainted with Lacépède, Cuvier, Laplace, Haüy, and other men of note, but his philosophy received little attention. Like all great men with new ideas, he was not well understood; and his philosophy was not essential to success in practical life. His work, however, went through 2 editions, but the profits were but small; not more than \$60 or \$65.—He married the widow of an officer, and was appointed professor of geography in the military school of Saint Cyr. When the school was removed to the Flèche, he gave up his professorship and came to Paris with his wife and family. Their united means were small, and he was very poor for a long time. At length the government appointed him inspector of the library of Avignon, and there he published his great work (8 vols. 8vo) on the "System of the Universe," or the *Système Universel*. The following year he went to the city of Nancy, in the same capacity, and commenced a work on the destiny of man. At the downfall of Napoleon he lost his place, and retired again to Paris, where he lived some time in poverty. Several of his

friends at length obtained for him a pension of \$1,100 per annum, afterward reduced to \$400. He lectured publicly at the *Athénée Royale* in Paris, and being a lucid orator, attracted large audiences. In 1826, he published his "Universal Explication." During the years 1827 and 1828, he held conferences in his own private garden in the suburbs of Paris, which were attended by the élite of both sexes, and for many years was popular in every class of French society. His nature was benevolent; his conversation pleasant and instructive; his intellect serene; his manners simple and polite. In 1829, he published his *Principes de morale et de politique*; in 1833, his *Cours d'explication universelle*; in 1834, his *Idees precises de la verité première*; in 1835, *De la vraie médecine*, and *De la vraie morale*; in 1836, *Physiologie du bien et du mal*, for which the French academy awarded a prize of \$1,000; in 1839, *De la phrenologie, du magnétisme et de la folie*; in 1840, *La constitution de l'univers et l'explication générale des mouvements politiques*; for which the academy awarded another prize of \$400.—The name of Azais and the philosophy of compensation are now as inseparable as the name of Newton and the law of gravitation.

AZALEA (Gr. *αζαλεος*, arid), a genus of plants belonging to the natural order of *ericaceæ*, and to the sub-order of *rhodoreæ*, named in allusion to the dry places in which many of the species grow, and consisting of upright shrubs with large, handsome, and fragrant flowers, often cultivated in gardens. The genus comprises more than 100 species, most of them natives of China or North America, having profuse umbelled clusters of white, orange, purple, or variegated flowers, some of which have long been the pride of the gardens of Europe. The general characteristics of the genus are a 5-parted calyx, a 5-lobed funnel-form, slightly irregular corolla, 5 stamens, a 5-celled pod, and alternate, oblong, entire, and ciliated leaves, furnished with a glandular point. The species may be classified into those which have glutinous flowers, and those whose flowers are but slightly or not at all glutinous; each of which classes may be subdivided into those which have short stamens, and those which have stamens much longer than the corolla. Of those which have a glutinous corolla and short stamens, are the *viscosa* and the *glauca*, very nearly resembling each other, found native in North America from Maine to Georgia, growing from 4 to 10 feet high, and having many varieties of flowers, either white or tinged with rose color. Of those which have a glutinous corolla, with long stamens, are the *nitida*, *hispidula*, and *pontica*, the 2 former being American species and found in mountainous regions in the middle states, the latter a native of Turkey and the northern borders of the Black sea, and distinguished by its brilliant yellow corolla. Of those whose flowers are smooth or but slightly glutinous, and have long stamens, are the *peri-*

elymena, or upright honeysuckle, found on hill-sides in all the woods of North America; the *canescens*, with a white flower which has a red tube, an early and tender American species; and the *arborescens*, a rare and beautiful shrub, with elegant foliage and very fragrant rose-colored blossoms, found about the Blue Ridge mountains of Pennsylvania. Of those whose flowers are not glutinous, and which have short stamens, are the *sinensis*, nearly resembling the *pontica*; the *indica*, a Chinese species, with brilliant variegated flowers, cultivated in Europe and America as a greenhouse plant; and the *ledifolia*, also a native of China, with evergreen leaves, and larger flowers than those of the preceding. The leaves of all the American species are deciduous. In cultivation the azaleas love the shade and a soil of sandy peat or loam.

AZAMOR, a fortified seaport town of Morocco, 122 miles N. N. W. of Morocco, on the Atlantic, at the mouth of Morbeys river, which forms its harbor lat. 38° 17' 37" N., long. 8° 15' W. Pop. about 1,000.

AZANI, a decayed city of Asia Minor, on the Rhyndacus, where it is crossed by 2 ancient bridges. Its remains are extensive. Among them are a fine Ionic temple of Jupiter, and a theatre 232 feet in diameter. A small modern village is built among its ruins.

AZANZA, José MIEUX DE, a Spanish politician, born at Aviz, in 1746, died at Bordeaux, June 20, 1826. After studying in several universities, visiting Havana, and travelling through the various provinces of Spain, he entered the army, and in 1781 distinguished himself at the siege of Gibraltar. He was subsequently ambassador from Madrid to St. Petersburg and Berlin, and during the military occupation of Madrid by Murat, he acted with great vigor and prudence as member of the supreme council of government. Though he remained in office under King Joseph, he retained an enthusiastic love of liberty. At the return of Ferdinand VII., he lost his fortune and political position, and went into exile in France.

AZARA, José NICOLÒ DE, a Spanish diplomatist, born at Barbuñales, in Aragon, in 1731, died at Paris, Jan. 26, 1804. While pursuing his studies at the universities of Huesca and Salamanca, he displayed an inclination especially for the fine arts, and this natural taste was further developed after he was appointed as the chargé d'affaires of the Spanish government at Rome. In that capital he became intimately associated with the most celebrated artists of the time, and especially with the painter Mengs, who had entered into the service of the king of Spain. He showed rare diplomatic ability in the negotiations which he conducted with Clement XIII., and continued, under the pontificate of Clement XIV., to exercise great influence upon the relations of his government with the holy see. He took part in the measures for the abolition of the Jesuits, and for the election of Pope Pius VI. In 1796 he was

sent by his court to meet the conqueror of Italy, and ask favor for Rome. He presented to Napoleon the bust of Alexander, which is still seen in the museum of the Louvre, and which passed for the only authentic portrait of the hero of antiquity. He was strongly impressed with the good faith of the first consul, and when, 2 years later, he was sent on a mission to Paris, he acted upon the principle of entire confidence in the head of the French republic. The cabinet at Madrid was, however, undecided, and, during its fluctuations, Azara was recalled, exiled, restored with fuller powers, and again recalled. His health, already infirm, could not resist so frequent shocks, and he died before leaving Paris. He left a valuable collection of books, paintings, and antiquities. He also published the works of his friend Mengs, and wrote his life. He was the author of "Memorials of Ancient and Modern Architects," written in Italian, and of a Spanish translation of the "Life of Cicero," by Middleton.—FELIX DE, brother of the preceding, a learned Spanish traveller, born at Barbuñales, May 18, 1746, died in Aragon in 1811. At first he pursued a military career, and took part in the unfortunate expedition against Algiers in 1775. In 1781 he was one of the commission appointed to settle the boundaries between the Spanish and Portuguese possessions in America, and during his abode in the new world undertook the laborious task of drawing up a chart of the vast country whose outline he had examined. Thirteen years of difficult and dangerous labor were devoted to this enterprise, and the results of his observations were published under the title of "Travels," between 1781 and 1801. He also published several essays upon the quadrupeds and natural history of Paraguay and other South American provinces.

AZARIAH. There are 18 persons of this name mentioned in Scripture: I. A high-priest (1 Chron. vi. 9), perhaps the same with Amariah (2 Chron. xix. 11). II. Son of Johanan, high-priest (1 Chron. vi. 10). III. The high-priest who opposed Uzziah (2 Chron. xxvi. 17). IV. A high-priest in the reign of Hezekiah (2 Chron. xxxi. 10). V. The father of Seraiah, the last high-priest before the captivity (1 Chron. vi. 14). VI. Son of the high-priest Zadok (1 Ki. iv. 2). VII. The captain of Solomon's guards (1 Ki. iv. 5). VIII. Another name for Uzziah, a king of Judah, who added materially to both the military and agricultural resources of his kingdom, but, for assuming the functions of the priests, was smitten with leprosy, and died, according to Jewish law, without the city. IX. The son of Oded, a prophet, who moved Asa, king of Judah, to make a covenant with God, after his success against Zerah, king of Ethiopia (2 Chron. xv. 1). X. (See 2 Chron. xxiii. 1.) XI. (2 Chron. xxi. 2.) XII. The son of Hoshai, who accused Jeremiah of deceiving the people, because he advised them not to go to Egypt, and who carried them all

into that land (Jer. xli. 2). XIII. The Chal-dean name of Abednego (Dan. i. 7, and iii. 19).

AZEGLIO, MASSIMO TAPARELLA, marquis d', an Italian statesman, author, and artist, born at Turin, Oct. 2, 1798. His father, who died Nov. 26, 1830, held a high position in the government, edited the conservative paper *L'Amico d'Italia*, and was appointed ambassador to the holy see in 1814. Young Massimo, although then only 16, followed his father to Rome. By desire of his father he afterward entered the army, but soon left it to resume the literary and artistic pursuits, which were more congenial to his nature, and for which his enthusiasm had been kindled by the art treasures and intellectual associations of the eternal city. His talent for authorship was doubtless confirmed by his relation to Manzoni, the author of *I promessi sposi*, whose daughter he married. From his position and training, D'Azeglio was singularly qualified to depict the old, and link its memories with the fresh impulse of the new. Accordingly, his two novels, *Ettore Fieramosco* and *Nicolo de' Lapi*, are among the most artistic and elaborate specimens of historical romance in his native language. *Ettore Fieramosco* is founded on the famous challenge of Barletta—an incident familiar to all historical readers, that of a drawn battle between 18 Italian and an equal number of French knights. Beside the full and correct details of the event, its antecedents and consequences, and the well sustained, and attractive character of the hero, many historical personages are introduced with great effect, such as Cæsar Borgia and Vittoria Colonna; the scenes are eminently true to local fact, and the whole composition is kindled by the sentiment of patriotic integrity. This work, which appeared in 1838, was followed, in 1841, by *Nicolo de' Lapi*, also inspired by the desire to recognize and awaken national sentiment. The siege of 1529-'30, when Florence so bravely held out against the united forces of Pope Clement VII. and the emperor Charles V., is the central historical fact illustrated; but incident thereto are admirably painted the architecture, domestic life, military and religious customs and sentiments, the public traits and the private affections of the Florentines of that era. D'Azeglio's prevalent taste, notwithstanding his success as a novelist, is for the labors of the studio. He has reverted, after a brief political career, to the palette and the pencil; and among his late productions are some of the best compositions in oil to which modern Italian art has given birth. Crowned thus at home and abroad with the fame of a painter and author, D'Azeglio, within the last few years, occupied a not less prominent position as a statesman. With an ardent love of country, and a rare knowledge of national peculiarities, he wrote, at the epoch of the revolutions which followed the downfall of Napoleon's rule in Italy, in a spirit of moderation, good sense, and sympathy, of which his pamphlet, *Degli ultimi asi di Romagna*, is an example. When the

recent progressive movement in Piedmont began, he took an active part, as minister of foreign affairs, in promoting reform, initiating a liberal policy, establishing new charities and educational systems, developing the internal resources, and reorganizing the foreign relations; his personal influence with the king was great, and by pen and voice, in the cabinet and in society, as a minister and a man, D'Azeglio exerted a powerful influence. Ill health, love of art, the desire for the retirement and pursuits accordant with his tastes and habits, and some differences of opinion with his colleagues, have withdrawn him from public life, although his advice is always sought on all occasions of special interest. In his address to the Sardinian parliament, Feb. 12, 1852, he gave expression to the highest sentiments and principles which can actuate a constitutional government. He commenced in the *Antologia Italiana*, in 1845, a new romance, founded on the Lombard league, which ceased with that journal; soon after, he became absorbed in official duties, and, since his retirement, his days of health have been chiefly devoted to travel, study, society, and painting. A complete edition of his political writings, in 1 vol., appeared at Turin in 1851.

AZERBAIJAN, a northern province of Persia, bounded N. and N. E. by the Russian dominions, E. by the province of Ghilan, S. by Persian Koordistan and Irak, W. by Turkish Koordistan. It formed a part of the ancient Atropatene, from which its modern name is derived. The country is mountainous, with fertile valleys and small plains. Mt. Savalany, apparently once a volcano, is upward of 12,000 feet high. The chief rivers are the Kara Soo and the Aras. The salt lake of Ooroomesyah is in this province. The climate of Azerbaijan is generally healthy; the summers are very hot and the winters very cold. In the plains the pomegranate and olive thrive in the open air. The mineral resources of the province are not developed; but there are mines of iron, lead, and copper. The inhabitants are chiefly Mohammedans, but there are some settlements of Nestorian Christians, to whom much attention has of late years been paid in the United States and England. The ancient city of Tabreez is the capital.

AZEVEDO, COUTINHO JOZÉ JOAQUIM DA CUNHA, a Portuguese bishop, and the last inquisitor-general of Portugal and Brazil, born at Campos Dos Goitacares, in Brazil, Sept. 8, 1742, died Sept. 12, 1821. He took an active part in questions of political economy affecting the interests of his country, and published in 1792 a work entitled *Ensaio economico sobre o commercio de Portugal e suas colonias*. In 1794 he was made bishop of Pernambuco. He was afraid that the sudden emancipation of the slaves might lead to a revolution in Brazilian agriculture, and with the view of averting this calamity he published in London, in 1798, a pamphlet against the proposition to abolish the slave trade, made in the British house of commons. Shortly before his death he was elected

to the cortes as a representative of the province of Rio de Janeiro. But his political preoccupation did not seem to interfere with his clerical functions. He was named bishop of Elvas, but declined, and in 1818 was appointed inquisitor-general. The bishop is also the author of a memoir on the conquest of Rio de Janeiro by Dugué Trouin, in 1711.

AZEVEDO Y ZUNIGA, GASFARD DE, count of Monterey, a Spaniard who, in 1608, succeeded Luis de Velasco as viceroy of Peru and Mexico, died March 16, 1606. He equipped a fleet to search for the great southern continent, which, under the command of Pedro Fernandez de Quiroq, discovered several islands at about lat. 28° S.

AZIMGHUR, a town of Hindostan, capital of a district of the same name, in the presidency of Bengal, on a tributary of the Ganges, 60 miles N. N. E. from Benares. It has cotton manufactories and considerable commerce in cotton goods. It was ceded to the British, in 1801, by the nabob of Oude.

AZIMUTH of a star, the bearing of a star or other heavenly body; that is to say, the angle which a vertical plane through the star makes with the plane of the meridian; used in finding the bearings of other objects.

AZIO, a village of Greece, on the gulf of Arta, in the district and promontory of the same name, but better known under the ancient name of Actium. A German archaeologist, Dr. Erlinger, succeeded, in 1857, after several years' investigation, in ascertaining the position of the camps of Antony and Augustus, precisely as it was on the eve of the battle of Actium. He found the camp of the latter surrounded by a cincture of redoubts about 5½ miles in extent, which were constructed in stone, and protected by a ditch. At a distance of about 1,000 yards the remains of square towers and various projectiles, arms, and accoutrements were found. In the centre of the camp were the head-quarters of Augustus, occupying a superficies of about 1,000 yards. In advance of the camp were external works, consisting of several small forts of observation, one of them serving as a telegraph for communicating with the fleet. In the ruins of one of these forts was discovered a tablet in steel, on which signals are traced, resembling somewhat those of the aerial telegraphs. The camp of Antony has not yet been so closely examined, but the investigation of the same is expected to yield equally interesting results.

AZKAR TUARIK, an African tribe of the Tuarika, who inhabit the desert country between Ghat on the north and the tracts of the Kelowi Tuariks on the south, between lat. 21° and 26° N. They were first visited and made known to the European world by the British central African expedition of Barth, Overweg, and Richardson, who traversed the Azkar country in the months of July and August, 1850. Dr. Barth describes the country from N. to S. as a barren plain, with

scarcely any vegetation, and with isolated granite peaks, and few or no animals. The southern portion, bordering on the Kelowi Tuarika, is the uninhabited central region of the great desert. The northern portion is most frequently dotted with patches of herbage. In one of the villages the travellers found corn, melons, and *ghédéb*, cultivated in considerable quantity. The Akakus range, 70 miles long, breaks the dead level. Mt. Idinen, or "Palace of the Demons," is about 2,400 feet high. Horses, bullocks, sheep, asses, all imported from Soudan, are to be found in the neighborhood of Ghat, the only commercial emporium. Between lat. 24° and 25° the travellers came across an elevated wilderness of bleak sandstone rocks of fantastic form, 4,000 to 5,000 feet high, with vegetation and water in the ravines. In one of these mountains they met a number of small lakes of fine, clear water, in a caldron of immense cliffs. Between 23° and 24° is the mountain region of Anahef, abounding in wild oxen and gazelles. At 28° the travellers reached Wady Arokam, an immense hollow bordered by lofty precipitous rocks, and full of trees and herbage, one of the grandest desert prospects seen by the expedition. In the southern region they observed blocks of marble and quartz. The inhabitants of Azkar, like the rest of the Tuarika, belong to the Berber and not to the negro race. They are fanatical Mohammedans in religion, hating both Pagan and Christian. They are monogamists. They are a warlike aristocracy, divided into 5 *tiyas*, or clans, and subdivided into 30 divisions or *fayas*, each of which has a separate chief. The subject class, or *helots*, probably the descendants of vanquished tribes, are called *Imghad*, or serviles. While the women of the ruling class are tolerably fair, those of the serviles are almost black, but nevertheless well made, and not only without negro features, but generally with a very regular physiognomy. Whether their language is the same as that of the Azkar, Dr. Barth is not sure. The *Imghad* are divided into 4 sections, and furnish 5,000 warriors. The *Imghad* live solely in the oases of the desert, and are not allowed to reside in either Ghat or Barakat. The ruling race subsist upon the labor of the serfs, and also upon the tribute they raise from caravans. The serfs are not allowed to carry an iron spear or wear a sword, which is the distinction of the freeman. See Richardson's "Narrative of a Mission to Central Africa," London, 1853; Barth's "Travels in Central Africa," London, 1857.

AZMARI, the name applied to a set of vagrant beggars in Abyssinia, part of whom form the music bands of the Abyssinian army, while the rest exercise their musical voices in the street, especially on religious holidays.

AZO, or **Azzo**, or **AZZOLINUS**, **PORTITA**, an Italian lawyer, died in 1200. He professed jurisprudence at Bologna with such éclat that the college could not contain all his auditors, so that he had to take to the public square.

AZOF, AZOFH, or Azov. I. The ancient *Palus Maotis*, an inland sea in southern Russia, or in the S. E. quarter of Europe. Its length from the sandbanks opposite the Crimea, north to the mouth of the river Don, is about 212 miles; breadth, 110 miles. It is shallow, marshy, scarcely navigable for small vessels, encumbered with sandbanks, and generally muddy at the bottom. The waters recede to a great distance from the shores whenever the wind is strong either E. or W. The Azof sea is covered with ice from November often to March; is full of fish; and is supposed to have formerly communicated with the Caspian by a strait still indicated by a low tract of land. It is connected with the Black sea by the narrow strait of Yenikale, the Bosphorus Cimmerius of the ancients. Around the Azof and this strait there was in antiquity believed to be a mysterious region, the special seat of witchcraft, and of the arts of night and evil. The Orphean Argonautica speaks of the Bosphorian Cimmerians around the northern hyperborean Maotis as of men who never saw the light, and who guarded the approaches of Acheron and the Elysian fields. There dwelt the Cimmericans or Kimmerians, who, in remote antiquity, invaded Asia Minor, and burnt the temple of Diana at Ephesus. Here, too, was a stopping-place of the Asiatic hordes of Scythian, Finnish, or Mongolian race, who, under various names, successively invaded Europe at different times from the 4th to the 12th century. II. Azor, a town and fortress in Russia, in the country of the Cossacks of the Don, on an eminence on the left bank of that river. It was founded early in the Grecian epoch by Carian colonists trading on the shores of the Euxine, and was called Tanais, after the river. In the middle ages it was called Tana. It was in the possession of the Venetians, and then of the Tartars, who gave to it its present name. It is now fallen into decay, as the city Taganrog, at the mouth of the river, monopolizes the trade.

AZOGA SHIPS, from the Spanish *azogue*, quicksilver, were so called from their carrying mercury from Spain to the Spanish West Indies to extract the silver from the mines of Mexico and Peru.

AZORES, or WESTERN ISLANDS, a series of islands in the north Atlantic ocean, ranging between lat 36° 59' and 39° 44' N., and long. 31° 1' and 25° 10' W. They are divided into 8 clusters—the north-west consisting of Flores and Corvo islands; the central composed of Terceira, St. George, Pico, Fayal, and Graciosa; and the third of St. Mary and St. Michael. The islands produce the sugar-cane, the coffee plant, and fruits of various kinds in perfection. They are of volcanic origin; and in 1808 a volcano rose in the island of St. George to the height of 3,500 feet, and discharged floods of lava, which spread ruin over its whole surface. In 1811, the crater of a volcano suddenly merged from the sea to the height of 800 feet, and after ejecting vast quantities of lava, stones,

and cinders, gradually disappeared. These islands were taken possession of by the Portuguese government in 1482, then uninhabited. Their inhabitants are quite ignorant of the science of agriculture. Their implements are of the rudest kind; and they rely rather upon the spontaneous fertility of the soil than upon their skill for returns. The lupine is the favorite and general food of the poorer classes, after its bitterness has been extracted by treating in salt water. The Azores annually export upward of 17,000 pipes of wine and brandy, and 160,000 boxes of oranges and lemons. They also export coarse linen, salted pork, and beef. There is no good harbor. Pop. 203,500.

AZOTE. See NITROGEN.

AZTECO. This term, although generally used as synonymous with Mexican, is strictly applicable to one only of the various tribes or nations who, at the time of the conquest, in the 16th century, occupied the plateau of Anahuac or Mexico. It is derived from the Nahuatl words *astatl*, heron, and *atlan* or *tatlan*, place, or place of, i. e. place of the heron, one of the earliest seats or halting places of the seven Mexican tribes, viz.: the Xochimilcos, Chalcos, Tepanecas, Acolhuas, Tezcucana, Tlascaltecas, and Aztecas or Mexicans. These tribes collectively bore the name of Nahuatlacas, and their language was called Nahuatl, which is its proper designation. Tradition variously represents these families as emerging from 7 caverns, in a region called Aztlan, or as wandering away from their fellows, subsequently to a grand cataclysm, and after a distribution of tongues. These traditions, however, do not fall within the domain of history, and critical writers have generally preferred to confine their researches within the period fixed by the Mexican paintings or records. Several of these are in existence, and although differing considerably in their chronology, they do not carry back the history of the Aztecs and their affiliated tribes beyond the 11th and 12th centuries of our era. There is abundant evidence, nevertheless, that the plateau of Mexico was occupied for many ages anterior to the arrival of the Nahuatlacas, by a people of much higher culture, of whose civilization that of the Aztecs was but a rude reflection. This earlier people has been vaguely denominated Toltecs, a corruption of Tlhuatlacas, and its original seat is to be looked for in Chiapas and Guatemala, where the ruins of Nachan (Palenque), Olosingo, and the other Palmyras of that magnificent tropical region, still bear testimony to the skill and power of their builders. The locality of the traditional Aztlan has been a subject of much speculation. By some writers it has been supposed that this primitive seat of the Nahuatlacas was in Asia, and that the paintings, all of which depict the passage over a body of water in canoes or on rafts, represent a migration to America from that continent. Most, however, imagine Aztlan to have been somewhere to the north of Mexico, beyond the river Gila. This idea

seems to have originated in the early and vague accounts of the existence, in that region, of vast ruined edifices, which were supposed to mark the steps of the Aztec migration, and which, under the name of *Casas Grandes*, have given rise to much speculation. These ruins are now known to be only the remains of such edifices as are still built by the Moquis, and generally by what are called the Pueblo Indians of New Mexico, who, as was long ago pointed out by Torquemada, have neither language nor habits in common with the Mexicans proper. It is worthy of remark that no native history, chronicle, or known hieroglyphic of the Mexicans, assigns a northern origin to the Aztec tribes, except the relation of *Ixtlilxuchitl*, who wrote a considerable period after the conquest, and who in this matter only followed the Spanish authors who had preceded him. In the painting representing the migration of the Aztecs, originally published by Gemelli Carrera in his *Giro del Mondo*, the sign or hieroglyphic of Aztlan is accompanied by the representation of a teocalli or temple, by the side of which stands a palm tree—a circumstance which excited the astonishment of the cautious Humboldt, as opposed to the opinion that Aztlan was to be looked for in a northern latitude. The palm certainly points southward as the direction whence the traditional migration took place; and this indication is supported by the fact that a people speaking the same language with the Aztecs (the Nahuatl), and having identical habits, laws, and religious observances, existed as far south as Nicaragua, and at the time of the conquest occupied nearly the whole of the present state of San Salvador, in Central America.—Passing, however, from the question of the locality of Aztlan, the next question concerns the date of the departure of the 7 tribes from that place. According to Gemelli's painting, this event happened in the year 1088 of our era; according to the astronomer Gama, in 1064. Veytia follows Gama; but Clavigero fixes the period nearly a century later, in 1160. But great uncertainty is attached to all dates previous to the foundation of the city of Tenochtitlan or Mexico, which event all accounts concur in fixing in the year 1324 or 1325 of our era. Tradition and the paintings represent, that various halts and stoppages took place after leaving Aztlan, before the 7 tribes reached the valley of Mexico; and the time occupied is variously estimated from 56 to 168 years. According to the painting obtained by Boturni representing this migration, they made not less than 22 stoppages, varying from 4 to 28 years in length—altogether occupying 162 years, before reaching Chapultepec. It does not appear that the various tribes all arrived at the same time in the valley of Mexico, but came in and took up their positions successively. They found the country rich and attractive, and occupied by only a remnant of an anterior and powerful people, who had left numerous monuments of their greatness. From these they

learned many of the arts of life, the cultivation of the soil, and the working of metals. At first they seem to have lived in harmony with each other; but gradually the stronger tribes began to encroach upon the weaker, which led to combinations for defence among the latter, and to a long series of bloody forays and wars. The Mexicans (subsequently so called from Mexi, one of their war-chiefs) ranked as the 7th tribe, and seem to have assumed the name of *Aztecas par excellence*. They were established first at Chapultepec, but gradually encroached upon the Chalcos, and finally, under the lead of a succession of military chiefs, became the most powerful tribe in Anahuac, and established their imperial city in the lake of Chalco. This event took place in 1324 or 1325, under the reign of Tenuch, and the city was called Tenochtitlan, the place or seat of Tenoch or Tenuch. The site, like that of Venice—a few low islands in a great lake—was admirably chosen for defence, and the Mexicans exhausted their art in strengthening the position. It could only be approached over long and narrow causeways, easily defended, and which even the Spaniards were not successful in forcing. Commanding the lake with numerous fleets of boats, they were unassailable from the water. From this stronghold, they gradually reduced their neighbors, their companions from Aztlan, or forced them into a kind of dependent alliance, which served still further to build up their power and influence; so that, at the time of the arrival of Cortes, the Mexican emperor exercised a qualified dominion over nearly all the aboriginal nations embraced within the present boundaries of the republic of Mexico. This power was often exercised without mercy, and many thousands of their captured enemies were sacrificed on the altars of their sanguinary divinities. How severely their yoke was felt, and how eagerly it was thrown off, is shown by the readiness with which the Tlascallans, their own kindred, joined the Spaniards in their attack on the Mexican capital. The student of Mexican history cannot resist the reflection, that with its prestige, policy, and valor, had the Spanish invasion been delayed another century, the island city of Tenochtitlan might have spread its dominion over the whole North American continent—or, at least, as far as it could have found organized communities to conquer. The only state which held any thing like an independent position in the neighborhood of Mexico, was that of the Acolhuas, better known, from their capital, as Tezcucanas. Under a succession of able princes, they kept up a kind of alliance with the Mexican kings, and reached a high position in the scale of aboriginal civilization. The form of government among the Mexicans was an elective monarchy; and the legislative power resided wholly with the king. The administration of the laws belonged to certain judicial tribunals, and was conducted with great regularity, and with Draconic sternness. Their re-

ligion was sanguinary in most of its practices; yet it combined the elements of a milder system, probably, than that of their Tuluatcan predecessors, whose religion was closely allied to the Buddhist system of India. As essentially a warlike nation, they made the highest beatitudes of their faith the rewards of the bravest soldiers; and while the soul of the common citizens, after death, was believed to be subjected to a purgatorial existence, that of the warrior, who fell in battle, was caught up at once to the abode of the gods, to the bosom of the sun, the heaven of eternal delights. In the arts, and especially in their architecture, the Mexicans achieved an advance corresponding with their numerical and political growth; and the islands which at the outset supported only rude huts of cane and thatch, came finally to be covered with imposing edifices of stone and lime (*cal y canto*). Metallurgy was extensively practised, and gold and silver, copper, and a species of brass, were well known and elaborately worked; but iron, except in its meteoric form, was unknown. It would be impossible, in the limits of an article of this kind, to indicate, however slightly, the political, social, and religious practices, customs, and organization of this interesting people, whose subversion forms the most dramatic incident in the history of this continent. Fortunately the sources of information on this subject are open and easily accessible, in the pages of Sahagun, Solis, Olavigno, and Prescott. To the published data, it only remains for us to add the following chronological table, from an unpublished Mexican painting or MS., in the possession of Mr. E. G. Squier:

Aztecs leave Aztlan.....	A.D. 1164
Arrive in Valley of Mexico.....	1216
Tenotimatlacoan, founder of Mexico, commences to reign.....	1294
Acamapichtli, second king.....	1378
Huitzilohuitzin.....	1394
Chimalpopoca.....	1415
Itzcohuatzin.....	1428
Hue Montecumatzin (Montezuma I.).....	1438
Axayacatzin, king.....	1471
Ticocatzin ("Tlaxc").....	1490
Ahuizotzin.....	1494
Monetecumatzin (Montezuma II.).....	1502
Entry of the Spaniards.....	1519

AZUNI, DOMENICO ALBERTO, an eminent jurist, and writer on maritime law, was born at Sassari, in Sardinia, Aug. 8, 1749, and died at Cagliari in January, 1827. His most important work, entitled *Droit Maritime de l'Europe*, was published in 1805.

AZURARA, GOMEZ EANNES DE, a Portuguese historian, born at Azurara, in the first half of the 15th, and died in the latter part of that century. He was a monk of Evora, was early admitted into the order of Christ, passed his youth in the exercise of arms, and only when advanced in age devoted himself to those studies to which he owes his reputation. He was familiar with the learning of his time, and wrote with a facility and vigor of style which gained him the applause of his contemporaries, and the especial esteem of the royal poet and cavalier, Alfonso V. In 1459 he was appointed by the

cortes to reform the archives of the state, and destroyed numerous papers which he judged useless. The extent of the disaster was, however, limited by the zeal of several persons in taking copies of valuable documents. His principal work, for writing which he had the advantage of a residence in Ceuta, was a chronicle of the discovery and conquest of Guinea, the great object of Portuguese enterprise, under the patronage of Prince Henry, in the early part of the 15th century. This authentic and highly esteemed record was discovered in the *Bibliotheca Imperiale* of Paris, in 1837. It was published by the Portuguese ambassador, who transcribed the MS. with his own hand, and is a book well deserving the care which has been bestowed upon it.

AZURE, the blue pigment produced by melting a mixture of a salt of cobalt with quartz-sand and potash. This colored glass, ground to an impalpable powder, is the azure, or more commonly called smalt, which is used for coloring porcelain and pottery, by melting it with the glazing.

AZYMITES (Gr. *a* privative, and *ζυμη*, leaven). About A. D. 1025, a violent controversy arose between the Greek and Latin churches, on the kind of bread which should be used in the sacrament. The Latins claimed that unleavened bread should be used, and it certainly had been in the western church, since at least the 9th century. The Greeks, on the other hand, maintained, in the person of Michael Cerularius, bishop of Constantinople, that the use of unleavened bread was a remnant of Judaism, and that therefore common bread should be used. This controversy ran very high. From it grew the terms Prozymites and Azymites, or Fermentarians and Antifermentarians, epithets opprobriously applied on both sides. One party endeavored to sustain from John's gospel, that Jesus kept the supper with his disciples one day before the passover, and therefore, that he must have used leavened bread; while the other endeavored to reach a different result from the other evangelists. The unleavened bread, or wafer, is still used by the Roman Catholic church, while the leavened bread seems to have come into general use in Protestant churches.

AZZANO, a village of northern Italy, in the Lombardo-Venetian kingdom, 8 miles S.S.W. of Verona, and having 420 inhabitants. Here the Austrians were defeated by the French in 1799.

AZZIO, TOMMASO (frequently referred to under his Latin name, Thomas Actius), a learned jurist of Fossombrone, in the pontifical states, who flourished at the end of the 16th and commencement of the following century, celebrated by his various publications on jurisprudence, and chiefly by his treatise on the game of chess, from a legal point of view. This appeared at Pesaro in 1588, under the title of *De ludo Scacorum in legale methodo* (of which one copy is to be found in Philadelphia), and which was afterward added to the 7th volume of the *Tractatus Universi Juris*,

B

B, the second letter and the first consonant in many alphabets, as the Hebrew, Phœnician, Syriac, Greek, Latin, Italian, French, English, and all having any philological affinities with them. In the Ethiopic language B is the 9th letter. It is termed a labial from its being uttered by the lips instead of the tongue, and also a mute, because the sound of the preceding vowel is entirely arrested in the closing of the lips. It is the simplest and first-acquired consonant uttered by the human voice. It also enters more largely than any other consonant into the cries or calls of animals. It is lacking in most of the dialects of our aboriginal Indians, who speak with open mouth. It is a letter which in all languages wherein it is found, has been freely interchanged for certain other letters. Those with which it has been most commonly interchanged are F, P, and V. Such interchanges will not appear strange when we notice that these consonants are all labials, and differ only in the manner, so to speak, of letting the sound escape from between the lips. By the careful study of consonant exchanges, we may discover the most remarkable affinities of languages, which would otherwise escape notice. From the interchange of B with F, we have *life-guard* instead of *body-guard* from the German *leib*, body. From interchange of B with V, we render the Latin *habere* into the Italian *avere*, and the English *have*. By observing this interchange we discover the unity in the paradigms of many Latin verbs, as *amo*, where the imperfect and future take an inflection with *b* for the consonant part, while the perfect and past-perfect and future-perfect inflect with *v*. In Spanish the same interchange is common, under certain circumstances. In modern Greek B seems to be equal to V, as in *Basileus*, which is pronounced *vasilefs*. B is interchanged with P in Latin, as *opponere*, for *ob, ponere*, in German at the end of a word, and in Armenian at the beginning. Thus *Baulus* is written for *Paulus*. It stands also in Latin for *du*, as in *bellum*, ancient form, *duellum*, which is still preserved in our *duel*. The name of the letter was in the oriental languages *Bet*, in Greek *Beta*, in Runic *Boeok*, in Russian *Bouki*. "Marked with a B" is a French phrase, to designate an evil-minded person, because all halt, blind and hunchbacked persons were traditionally supposed to be possessed of evil spirits, and the French words for these misfortunes all begin with B. B is the second dominical letter.—B, in music, is the nominal of the 7th note in the natural diatonic scale of C. In solmization this note is known as *Si*. Guido, in reconstructing the scale, furnished syllables for the 6 notes C, D, E, F, G, A, only. Dr. Nevers, a French musician of

the last century, is said to have been the first to designate this note by the syllable *Si*.

BAADER, FRANZ XAVER VON, a German metaphysician, born at Munich in 1765, died there May 23, 1841. He was afflicted with somnambulism in his childhood, and even when not in a somnambulist state, he displayed all the peculiar characteristics of thought which belong to a mystical temperament, and which found vent in his various writings, and also from his chair of speculative theology at the university of Munich, to which he was appointed in 1826. He studied medicine, geology, mineralogy, and for some time he was employed by the Bavarian government in mining and surveying departments, but his heart was not with any of these pursuits. The religious element preponderated in his nature, and he strenuously opposed the pantheistic tendencies of Schelling, Hegel, and their compeers. He called Jacob Böhme the greatest of thinkers, and wrote his *Fermenta Cognitionis*, principally with a view of calling the attention of the public mind in Germany to Böhme's philosophy. In politics he belonged to the ultra-conservative party, and in his little work *Ueber die Revolutionen des positiven Rechtsbestands*, he opposed all innovations in matters connected with civil and religious affairs. He was not a man of creative thought, but his indefatigable industry is sufficient to secure a lasting consideration for his name. His chief works are "Lectures upon Religious Philosophy in Opposition to the Irreligion of both Ancient and Modern Times;" "Demonstration of Ethics by Physics;" "Memoir upon Elementary Physiology;" "Absolute Extravagance of the Practical Reason of Kant;" "Memoir on Physical Dynamics;" "Principles of a Theory destined to give Form and Foundation to Human Life;" "Christian Ideas of Immortality as Opposed to Unchristian Doctrines on the Eucharist," &c.

BAAL. This word is of Phœnician origin, and signifies lord or ruler, and was used to designate the supreme deity, by the Phœnicians and Chaldeans, and most of the oriental nations, in the time of the Exodus. The Israelites came into immediate contact with the worship of this god, in their removal to the promised land, inhabited by the Canaanites. Consequently, an account of many of the religious ceremonies with which this Chaldean god was worshipped is presented to us. Baal seems to have been the sun-deity, and was worshipped generally on high eminences, either natural or artificial. Fires were kindled on altars constructed for the purpose, and human sacrifices consumed in them. In the simple conceptions of the early heathen religions, we find the supreme power

to have been apprehended as a duality under the ideas of generation and conception, and therefore with the distinctions of sex. Thus Baal was the male deity, whose female correlative was Ashtoreth or Astarte. As Baal was worshipped as the sun, so Ashtoreth was the moon, or "Astarte, queen of night." Baal was the same as Bel or Belus of the Babylonians and Assyrians, whose language was cognate to the Syriac and Phœnician. Some conjecture that Baal corresponds in Chaldean mythology with Saturn in the Grecian; but following the guiding light of the sexual representation above referred to, we shall rather find Baal to be the Zeus and Jupiter of the classic mythology, while Ashtoreth has her counterpart in Aphrodite, or Venus. Indeed, at Hieropolis in Syria, we are specially informed, there was a temple to Venus, there worshipped under the name of Astarte. Collateral with these, may be placed the Osiris and Isis of Egypt, and the Gad and Meni, so frequently mentioned in the scriptures, whom the Jews worshipped in the days of Jeremiah, having incorporated them into their own cultus from that of the Phœnicians or Carthaginians. How widely spread, and therefore how congenial to the early religious apprehensions of men, the worship of this duality of deities was, we may judge from the facts of history. The Scriptures give us an account of the facility with which the Jews embraced, and the tenacity with which they retained the worship of Baal (who was the same as Moloch). Manasseh, the 16th king of Judah, set up altars to Baal in groves and high places, prepared for the purpose, made his children pass through the fire to that god, and set up an image of Astarte in the temple. Israel also was no less involved in this departure from the monotheism of the Mosaic system, to the duo-theism of Chaldaea. In Samaria, the capital of Israel, after the revolt of the 10 tribes, Baal was extensively worshipped, until the time of Jehu, who destroyed the altars of Baal, and tore down the high places of his worship. When the Jews were reproved by the prophet for their idolatry, they insisted that ever since they had left off sacrificing to the queen of heaven, they had been consumed by sword and famine. As early as the times of the Judges, the whole Jewish people served Baal and Ashtoreth, and the vocabulary of Palestine geography attests the thorough domestication of Baal-worship among the inhabitants, in the frequency with which the word Baal appears as a component part of the names of towns and cities, as Baalath, Baal-meon, Baal-peor, and Baal-tamar. Remnants of Baal-worship have descended either through the Jews or the Gentiles even to our own time, and exist to-day in nearly all Christian countries. In Sir John Sinclair's statistical account of Scotland, he describes a ceremony which used to be celebrated in Scotland on the 1st of May (O. S.), in which the inhabitants of a district, having assembled in a field, dug out a square trench in which they built a fire and

baked a cake, and cutting it into as many pieces as there were persons, and blacking one piece over with charcoal, threw them into some convenient receptacle, when each one blindfolded, drew a piece. He who drew the black piece was sacrificed to Baal, to propitiate his favor for the coming year. The same ceremony is still observed in some parts of Scotland and Ireland, except that the person who draws the black piece is made to leap 8 times through the flames, instead of being sacrificed, a similar substitution to that instituted by Manasseh, who "made his sons pass through the fire to Moloch." This ceremony is known by the name of Beal-tine, or Baal-tine. The same rites are celebrated in Sweden, Norway, Germany, and nearly all the European states.—It will be remembered that the Rev. J. L. Porter, missionary at Damascus, in his excursion to the summit of Hermon (1852), found on the top of that mountain and 8 other peaks of the Anti-Lebanon range, the remains of structures of very high antiquity, and which he conjectures to have been temples of Baal, from their similarity to the ruin on Mt. Greenan in the north of Ireland, so celebrated as the great sanctuary of sun-worship. That such temples or structures actually existed in the promised land before the entrance of the Israelites is evident from the command given to Moses (Deut. xii., 2, 3), to destroy them. It is certain also that they were built in the mountains of Judea and Samaria by the Jews at least thrice after that, in the reigns of Rehoboam and Ahaz. These circumstances go to show how widely spread was the worship of Baal.

BAALBEC, an ancient city of Syria, famed for its ruins, the most extensive in Syria, with the exception of those at Palmyra. Baalbec in the Syrian tongue, signifies city of the sun; the Greeks translated it into Heliopolis, under which title it is spoken of by both Josephus and Pliny. It is delightfully situated on a rising ground, immediately beneath the mountain range of Anti-Libanus, at the north-eastern extremity of the plain El Bekaa, in long. 86° 11' E., lat. 34° 1' N.; the great number of springs and brooks in the vicinity, by irrigating the soil thoroughly, must have added greatly to its attractions as a residence. Of the origin of the city we know nothing, and as the earlier classical writers make no allusion to it, we must infer that it had at first a different name. Its prosperity must have been due, in great measure, to its situation on the high road of trade between Tyre, Palmyra, and India. It is even uncertain at what period the temples were erected; John of Malabar states that Antoninus Pius built a great temple to Jupiter here, but Julius Capitolinus, that emperor's biographer, does not mention it. From inscriptions on Roman coins, we learn that it was made a colony by Julius Cæsar; a military station by Augustus; and obtained the *Jus Italici* from Septimius Severus. It seems to have retained its prosperity down to the time of the Moslem invasion of Syria. The eastern writers describe in glowing colors its

stately palaces, its trees, fountains, and marble monuments of the past. After the capture of Damascus, it was besieged and finally taken by the Moslems, who exacted a large sum by way of ransom. It was sacked and dismantled in 748, and ravaged by Timour Bey in the year 1400. The Metaweli, a barbarous tribe, afterward held it until it was finally brought under the Turkish sway by Djezzar Pasha. The present town, lying east of the ruins, is a wretched mud-built village, of less than 2,000 inhabitants. The two larger temples stand on a low ridge, west of the modern town. They lie at the southwestern corner of the ancient city, the ruined walls of which are still visible. These were between 8 and 4 miles in circuit, faced with hewn stone, and had numerous square towers at moderate intervals. The greater temple stands upon an artificial platform, between 20 and 80 feet in height; with its magnificent peristyle, its immense courts and portico, it extended a thousand feet from east to west. It is probable that it was never wholly completed. On approaching it from the east, you enter a magnificent portico, 180 feet in length, and 37 in depth. Only the pedestals and its 12 columns now remain; the vast flight of steps which led up to it have also disappeared. The great portal, 17 feet in width, leads into a hexagonal court, about 200 feet in diameter, containing numerous rooms or recesses on the sides, all in a ruinous condition; on its western side another portal, 50 feet wide, brings you to a vast quadrangular court, 440 feet in length from east to west, by 370 in breadth. Around the sides of this court are numerous exedrae, with columns in front, they are 80 feet deep and elaborately ornamented with carvings. The vast peristyle, 290 feet in length by 160 in breadth, fronts upon the quadrangle, its columns, 54 in number, originally, are about 76 feet in height, and over 7 in diameter, usually consisting of 8 blocks only. This magnificent edifice, of which only 6 columns now remain standing, was elevated some 50 feet above the surrounding country, upon immense walls; the western of these contains 8 immense stones described by travellers. Their united length is 190 feet, the largest being 64 feet long, their average height 18 feet, their thickness still greater. Long vaulted passages run beneath the great quadrangle, from side to side. The lesser temple, which, like the other, is of Corinthian architecture, stands upon a lower platform, a little to the south of the peristyle of its greater neighbor; its length, including the colonnade, was 225 feet, and its breadth 120. Its peristyle consisted of 44 magnificent columns, 45 feet in height, of which only 19 remain standing; many of the fallen ones are scattered around. The carvings of the entablatures, the ceilings, and the capitals of the pillars, is exquisitely done. The great portal is over 21 feet broad, its sides and top beautifully sculptured; on the lower surface of the latter is the figure of the celebrated crested eagle, holding a caduceus in his

talons, and in his beak long garlands, the ends supported by flying genii. But it is impossible to describe the architecture of the temple in detail; reference may be made to the drawings and explanations of Pococke, made in 1787; the great work of Wood and Dawkins, in 1751; the description of Volney, in 1784; and the account given by Robinson, who visited the spot in 1852. That which most impresses the spectator, is the wonderful symmetry of proportion, which communicates an air of lightness and beauty to these stupendous masses. He finds it difficult to believe that the graceful columns still standing are equal in bulk with the immense shafts lying prostrate beside them, and can only satisfy himself of the fact by actual measurement. From the character of the architecture of these temples, it seems improbable that they were constructed at a very early period; though vast and massive like those of Thebes, they have little else in common. The immense platform on which they stand is the only portion of the fabric which might have been reared in a primeval age. Some 30 rods east of this huge pile, stands a very small circular temple, elaborately ornamented; at the time of Pococke's visit, the Greek Christians had converted it into a church. The material used in the construction of the temple is a compact limestone, quarried in the hills south of the town.

BAAZIUS, JOHAN, a Swedish divine, was born at Gardesby, near Wexiö, in the province of Smaland, in 1581, and died at Wexiö in 1649. After some years of study in his native country he visited the universities of Wittenberg, Jena, and Helmstadt, and upon his return was appointed rector of the gymnasium at Wexiö. A sharp letter, breathing a bitter and perhaps untimely zeal, drew upon him, in 1636, the displeasure of the convention of bishops. The quarrel, however, was arranged, partly through the intercession of the queen and partly on account of the ample apology offered by Baazius. In 1647 he became bishop of Wexiö. He published a great number of theological works, of which the most important is *Inventarium Ecclesiae Sueo-Gothorum* (1649).—His son, JOHAN BAAZIUS, called The Younger, born in Jonköping, July 17, 1626, and died in Stockholm, May 12, 1681, was successively bishop of Wexiö, bishop of Skara, and archbishop of Sweden. He took an important part in the ecclesiastical affairs of Sweden in his day, and left a high reputation for piety and learning.

BABA, a Turkish fanatic, who, in the year 1260, created great excitement in Turkey by claiming to be of divine origin, and introducing himself as a messenger of God. He gathered crowds around him, wherever he went, and made a number of proselytes, with whose assistance he laid waste Anatolia; but he was soon defeated, and his sect exterminated.

BABA ALI, the first independent dey of Algiers, died in 1718. He kept up excellent relations with foreign powers, especially with

Britain, inasmuch as he put to death a Moor who had struck the British consul.

BABABEG, **SHERER-BABO**, or **SHERER-E-BABO**, a fortified city of Persia, in the province of Kerman. It has a very fine market-house, which stands in the centre of the city, and communicates, by a long street, with each of the city gates. It is the seat of the deputy-governor, and is celebrated for its fruit-gardens.

BABADAGH, a town of European Turkey, in the province of Bulgaria, on Lake Rassein. Its inhabitants are chiefly engaged in the preparation of salt, and in fishing. It is remarkable for the number of its mosques, and for an aqueduct 2 or 3 miles long. Pop. 10,000.

BABAROZY, **ANTON**, a Hungarian partisan of Austria, born at Ofen, Feb. 13, 1813. Although he was for a moment carried away by the excitement of 1848, and went with a deputation to Vienna, to ask from the emperor the privilege of an independent administration for Hungary, he soon returned to his original fidelity. In 1849 he held an administrative office in the Austrian army under Gen. Haynau, and eventually he was appointed chief commissioner of civil affairs for Hungary.

BABBAGE, **CHARLES**, an English mathematician, born in 1790, educated at Trinity college, Cambridge. He early conceived the idea of a calculating engine, and visited the workshops in various parts of the continent for the purpose of studying machinery. Part of the results of this study are embodied in a volume called the "Economy of Manufactures," and another part in a calculating engine, which was commenced at the expense of the government, but under the supervision of Mr. Babbage, in 1821. In 12 years \$85,000 had been spent upon this engine, and it was so far perfected that it was used for calculating valuable tables, among them an extensive table of logarithms. In 1834 he commenced the design of another and far more powerful engine, which has not been built. Mr. Babbage was called to the Lucasian chair of mathematics at Cambridge in 1828, and held the professorship 11 years. Beside the work already mentioned, he has published a remarkable collection of religious essays under the title of "The Ninth Bridgewater Treatise," and several papers on the state of science in England. He has also written on geology.

BABBITT'S METAL, a soft alloy invented by Mr. Isaac Babbitt of Boston, and applied to the lining of boxes for axles and gudgeons, with the object of diminishing the friction, abrasion, and heat, and thus producing economy in oil. These patent boxes are extensively in use in the machinery of steamboats and locomotives throughout the United States. The alloy is prepared as follows: to 4 lbs. of melted copper 12 lbs. of best Banca tin are gradually added, then 8 lbs. of regulus of antimony, and then 12 lbs. more of tin, the heat after the copper is melted to be kept low—at a dull red. A little powdered charcoal on the metal protects it from oxidation. This alloy is called the hardening.

For use for lining 1 lb. of it is melted with 2 lbs. of Banca tin, the second melting being more economical than to melt all at once. The box or article to be lined is cast with a recess for the reception of the soft metal, and its inner surface is tinned over to cause the soft metal to cohere. A hole is drilled through the side of the box, through which the alloy is poured into its interior.

BABEL (Heb., confusion), in Scriptural history, a tower recorded to have been commenced by the immediate descendants of Noah, soon after the flood, and arrested by a divine interference confusing the speech of the workmen. This tower, with all pertaining to it, is involved in great obscurity, owing to the corruption of traditions, the mutilation of manuscripts, and the decay of matter. The tower of Babel claims to be the first monumental work of the post-diluvian world, and therefore, according to Christian chronology, carries us back a little more than 4,000 years. Modern explorations, though they give us much that is valuable concerning the ancient city of Babylon, near which the tower is supposed to have been, have done little to lift the veil from Babel itself. Of the form and size of this structure we can affirm little and prove less. In regard to form, the only thing that can be offered is a conjecture that in the simpler ages of architecture the square or triangle was more likely to have been used than the more complicated geometrical forms for the base. With regard to the object of this structure many speculations have been indulged—as that it was designed as a protection from another deluge, should such an event occur, or that it was to centralize and consolidate the human family, or that it was a fanciful way men had conceived of scaling the battlements of heaven. There is, however, a very plausible explanation of the objects of these builders which has received less attention. The Scripture says, "Let us build a tower whose top may reach unto heaven." Hebrew scholars translate this "whose top may represent heaven." If we have the location of Babel correctly determined, it was in the very heart of Baal-worship, from which has gone out a religious myth more persistent and extensive than any doctrine or tenet of any known religion. Chronologically, it was the earliest public and permanent expression of human thought after the flood, and a thought which, in the disastrous termination of its attempted embodiment, was disseminated to the 4 quarters of the globe. Baal-worship was the worship of the heavenly bodies, and of fire and light, those forces of nature which so spontaneously challenge the reverence of the unsophisticated heart. The name of this tower has been etymologically derived from *bab*, a gate, and Baal, or Bel, thus rendering it "the door of Baal." Therefore it represented, or stood before, the hosts of heaven. Samaria was, in later days, the centre of Baal-worship, after its introduction among the Israelites. The

prophet Isaiah says in denouncing the woe of Israel, "Shall I not as I have done unto Samaria and her idols, so do to Jerusalem and her idols?" And then, where in the 9th verse of the chapter we read, "Is not Calno as Carchemish? Is not Samaria as Damascus?" the Septuagint renders, "Have I not taken the region above Babylon and Charlam, where the tower was built?" Now so close a connection in this allusion between the idols of Samaria and Damascus (which were the idols of the Baal-worship), and the fate of the region where the tower was built, would seem to be an expression of the view Isaiah had of the purposes of the tower—that it was a temple for Baal-worship. Calmet supposes both the purpose and structure to have been similar to those of the Egyptian pyramids. If the worship of Baal was the object of this structure, then that of Ashtoreth was associated with it, and then the resemblance to the pyramids seems still more complete, for these were used in the worship of the dual forces of productive nature, Osiris and Isis. And if the Jupiter and Venus of the Greek and Roman mythologies and the Gad and Meni of the Phœnicians and Carthaginians be taken as expressions of the same religious faith, we have a universality and unity to this conception which must have had just such a chronological birth and radiating point as the tower of Babel furnishes. The tower probably gave the name to the city and province—Babylon and Babylonia. Much error and confusion has probably sprung out of supposing that the tower of Belus is the same as Babel. (See BABYLON.)—A legend similar to the Hebrew account of the tower of Babel was employed by the Mexicans to explain the origin of the temple of Cholula, near the modern city of Puebla. See Humboldt's *Vues des Cordillères*, pp. 81, 82, and Prescott's "Conquest of Mexico," vol. iii., pp. 880, 881.

BABELMANDEB (Arabic, the gate of tears), the strait lying between the shores of Arabia and Abyssinia, and uniting the Red sea with the Indian ocean. Its width, at the narrowest point, is about 20 miles. It contains several small islands, the largest of which, Perim, divides the strait into 2 channels, and, in a military point of view, commands it. This island was seized, Feb. 1, 1857, by the British during the Persian war, and is still held by them. Of the 2 channels, the eastern, and lesser, is chiefly used; it is from $1\frac{1}{2}$ to 4 miles in breadth, with a depth varying from 7 to 14 fathoms. The western channel has a depth of 180 fathoms. The strait takes its name from its dangerous navigation.

BABENHAUSEN, until 1806 one of the 880 separate states of which at that time the German empire consisted, and since then mediatized and attached to the kingdom of Bavaria, province of Swabia. It lies 25 miles south of Ulm, and is the property of the princes Fugger; area, 175 sq. miles; pop. about 12,000.

BABER, or BABB, or BABA, an island about 20 miles long and 10 wide, in the Indian

archipelago, in the same latitude with Java, in the direct line between Timor and Timor Laut. The island is mountainous but not very elevated; the soil is fertile; wild fowl and other game abound, and the adjacent waters furnish a plentiful supply of fish. There are settlements on the eastern and western shores of the island, and the inhabitants of these respective sides make it their employment to kidnap children and young persons each of the other, whom they either sell to the vessels that traffic to the island, or enslave them on the soil. The Dutch formerly had a settlement on the island, but it is abandoned.

BABER, or BABOUR, ZAHIR ED DIN MOHAMMAD, Mogul emperor, born Feb. 14, 1483, died Dec. 26, 1580. He was a lineal descendant of Tamerlane, and his father was sultan of Khokan, a Tartar kingdom on the Jaxartes. On his father's death, which happened when he was 12 years old, the kingdom was seized by his uncle, the sultan of Samarcand, but Baber opposed him, and succeeded in maintaining his rights. Baber's early life was a succession of wars with his neighbors, although the conquest of his paternal domains by another chief determined his fate. He was obliged to fly, and went to Khorassan with 800 followers, where he sought assistance from the sultan, which was refused: a number of Mongols, however, joined his standard, and Baber marched on Cabool in Afghanistan, which he captured in 1504. In the following year, having divided the conquered territory among his followers, he determined on an expedition against the Afghan empire in Hindostan; and he accordingly made an irruption into the Punjab and plundered Kohat. On this occasion he did not cross the Indus, but returned by Ghuznee to Cabool. In 1506 he became involved in dissensions in Khorassan by the death of the sultan, and for many years he was occupied with attempts to recover his paternal possession, and was obliged to defer his intentions against India. At length, in 1519, he again descended into Hindostan, and crossed the Indus, and, having conquered some towns in the Punjab, he placed garrisons in them and retired. In 1524 he advanced to Lahore, which he captured and burnt. In 1525 he advanced south to Paniput, about 50 miles from Delhi, on whose battle-field the destiny of India had been more than once decided. Here he encountered the troops of Sultan Ibrahim Lodi, the Afghan sovereign of Delhi, and completely vanquished him, April 21, 1526. Baber's lieutenants at once occupied Delhi and Agra, while his son, Humayoun, routed another Afghan army, and Baber himself had leisure to march south against the Hindoos. He gained a victory over Rana Sanka, the most powerful of the Hindoo princes. Now that opposition was at an end, Baber occupied himself in consolidating his extensive dominions. He made roads with stations for travellers; directed the land to be measured with a view to equable

taxation; planted gardens and introduced fruit trees; and established a line of post-houses from Agra to Cabool. He wrote his autobiography, which is valuable to the student of Hindoo history. He was succeeded by his son Humayoun.

BABEUF, FRANÇOIS NOËL, called Caius Gracchus, a French publicist and promoter of the doctrines of communism, especially known by the conspiracy which he plotted against the directory, born at St. Quentin, in 1764, guillotined at Vendôme, May 27, 1797. He first led an obscure life, being an assistant surveyor in a small town of the department of Somme; he then published a book called *Cadaastre Perpétuel*, expounding a new system for the registration of lands. On the outbreak of the revolution, he was tried for the startling doctrines he maintained in a provincial journal, but was acquitted. He was then appointed administrator of the department of Somme, but almost immediately dismissed from that post, when he repaired to Paris. Charged with being a counterfeiter, he was arraigned before the tribunal of the department of Aisne, and again acquitted. He returned to Paris in July, 1794, where he established a journal, *Le Tribun du Peuple ou le défenseur de la liberté de la Presse*, in which he appeared at once as a reformer. He wrote an article with this maxim of Rousseau as its motto, *Le but de la société est le bonheur commun*, and with the assumed signature of Caius Gracchus. This he followed up, by advocating the idea of absolute equality in his paper, and at the same time organizing a political society, the object of which was to diffuse the new system, while resisting the reactionary tendency of the directory. This society, known as the *Club du Panthéon*, soon acquired importance and alarmed the directory. Babeuf's doctrines were gaining ground every day, and his disciples, now designated under the name of Babouvistes, were active in circulating not only the *Tribun du Peuple*, but the pamphlets which their master and his principal adherents occasionally published. As early as the beginning of 1796, the Babouvistes were looked on as so formidable by the directory, that, on Feb. 26, they suppressed the club; but this measure only gave new impetus to the party. In March following, a secret committee was organized, to give directions to all the members; and in April, *Le Manifeste des Égaux*, a bold exposition of the whole theory, was disseminated among the people of Paris. "We not only want equality as it is set forth in the declaration of men's and citizens' rights," said the manifesto, "we want it also among us, in our homes. Let all arts perish, if necessary, provided true equality be maintained. . . . Agrarian law, or the division of lands, has been the spontaneous wish of undisciplined soldiers or semi-barbarous tribes moved by instinct rather than reason; we aim at something more sublime and more just, the common weal or the community of wealth. No more individual ownership of the earth;

for the earth belongs to no one. We claim the common enjoyment of its fruits; for these fruits belong to every one. We declare that we cannot any longer tolerate that the immense majority of men should labor and sweat in the service and at the discretion of a very small minority; for too great a length of time, less than 1,000,000 of individuals have had the disposal of what belongs to more than 20,000,000 of their fellow-beings, of their peers. . . . Henceforth there must be no differences between men except those of sex and age. Nearly all have the same qualifications, the same wants; therefore let them have the same education, the same support. We are satisfied with a single sun and a single atmosphere for all; why should not the same portion and quantity of food be sufficient for every one?" This manifesto was but an introduction to the plan of Babeuf, who aimed to organize society as a community ruled by a supreme despotic power. The individual was to be absorbed in the abstract being called the state. He held that the individual, taken in itself, is a nonentity, the state is all; alone having existence, and alone guiding each of its members, soul and body. According to Babeuf, man is but a sort of mechanism, an automaton which moves geometrically, and the decay of which must be prevented if we desire to prolong its life. It is therefore necessary to provide each person with "a healthy dwelling place, commodious and neatly furnished; linen or woollen garments fit for work and rest, and conformable to the national costume; washing, light, and fuel; a sufficient quantity of food in bread, meat, poultry, fish, eggs, butter or oil; wine or other beverage, such as may be used in various countries; vegetables, fruit, condiments, and other things, the union of which secures a moderate and sober comfort." Is not this all, asked Babeuf, that is wanted for the sustenance of physical life? As for intellectual nourishment, it is but a useless superfluity; the automaton man who governs himself may easily dispense with it. Thus Babeuf decreed: "No philosophy, no theology, no poetry, no romance, no painting, no sculpture, no engraving, except by way of relaxation. Let whoever wishes be an artist, on condition that he returns to husbandry when wanted, and gives up the pencil or the chisel for the plough." As a consequence of such a system, education must be common and equal; males and females, however, being educated in separate institutions. No great centre of population, no cities, or at least few of them; no palaces, but commodious and uniform houses for all; garments to be of different colors, according to age, sex, and occupation, but, with this exception, uniform. All these regulations were to be observed to the letter, as Babeuf did not forget to bind his adherents by an oath of fealty to his system: "No one," he enjoins, "will be allowed to utter opinions contrary to the sacred dogmas of equality. Before being entered on the roll of citizenship, every one must necessarily make a public avowal of the communistic

creed." All these doctrines were preached among the people, in connection with political opinions which still kept their hold on a number of men, who regretted the energetic system of the convention, and were dissatisfied with the line of conduct adopted by the directory. Their watchword was to be "The constitution of 1793, liberty, equality, common fortune, and the death of the usurpers." By skilful management, the Babouvistes succeeded in securing the assistance of many citizens; they were beside upheld by several deputies in the two legislative assemblies, Drouet among them, the same who had arrested King Louis XVI. at Varennes. They proceeded with great secrecy, so that a mass of men unknown to each other were to act in concert at the appointed time; they had, moreover, brought over to their cause some officers of the army of Paris, then encamped in the plain of Grenelle, and they believed they could depend on several regiments, while they were confident that, as soon as the undertaking was in a fair way of success, the workmen of the suburbs would also come to their assistance. The plan for attack had been shrewdly devised: the sections of the 12 wards of Paris were to march simultaneously in three bodies against the palace of the directory, that of the military commander and the hall of the legislative assembly. At the same moment, detached bodies were to seize on the gates of the city, as well as the various places where arms were kept. All was in readiness, and the secret committee were deliberating on the proper moment for taking up arms, when suddenly they were all at once arrested by order of the directory, who had received warning from an officer at the camp of Grenelle, and were aware of all their movements. Babeuf himself, who had remained with Buonarrotti to prepare the manifestoes which were to give impulse to the insurrection, was taken by the police. The conspirators, 65 in number, were arraigned before the high court at Vendôme. Babeuf defended himself like a man confident of the goodness of his cause; but the full discussion of his principles was not permitted. Although the evidence adduced against him was very weak, the jury would scarcely hear his defence, and on May 26, 1797 (5th Prairial Year V.), Babeuf and Darthe were sentenced to death; 7 others, Buonarrotti among them, to transportation; the other 56 were acquitted. On the hearing of their condemnation, Babeuf and Darthe stabbed themselves, in presence of their judges, but not to death, and they were borne still alive and bleeding to the scaffold, as Barbaroux and Robespierre had been before them. Beside his journal and his *Cadastre Perpétuel*, Babeuf published *Du système de dépopulation, ou la vie et les crimes de Carrier*, which is the most impartial history of that redoubtable commissary of the convention.

BABI, the generic term for hog in the Malay language; as *babi-utan*, wild hog; *babi-rusa*, *babirusa alfurus*, hog deer; *babi-tanah*, earth

hog, or mole; *anak-babi*, pig, literally child hog. The name has been given to a large number of islands which abound in wild hogs, throughout the Indian and Pacific waters, a fact attesting in a remarkable manner the extensive navigation of the Malay race. The most considerable thus named is a group on the west coast of Sumatra, the chief of which, Simalu, or Bashful island, lying between lat. 2° 40' and 8° N., has an area of 576 sq. m., and is surrounded by 16 islets, which have a united area of about 80 sq. m. They are inhabited by a semi-barbarous, yet simple and inoffensive race, called, by the Malays, Maros and Maruwi, and numbering about 5,000 souls upon the main island. A few buffaloes, and cocoanuts, and coconut oil, are the only exports of the group.—Another group of this name, 4 unimportant islets in the Rhio-Lingga Archipelago, lat. 22° N., long. 104° 17' E.; a small island of this name, 3 m. south of Great Carimon, straits of Malacca; another 3 miles west of Ceram; another, one of Aroe group, lat. 5° 55' S.; another in lat. 1° 48' N., long. 97° 28' E.; another on east coast of Johor, Malay Pen., lat. 2° 42' N.; another between Ombay and Wetta, lat. 8° 6' S.; another, lat. 5° 48' S., long. 106° 20' E. Babi is changed to *babui* in the Philippines; it is *bawi* on the coast of Java; *bawoi* with the Kayans, the chief of the Dayaks of Borneo; *baboi* among the Lampungs; *bai* in the island of Geby; *bain* in the island of Waygin; *badul* among the Sundese of Java; *bali* in the islands east of Java; *wawi* in the island of Floris or Ende; *fahi* in Timor, east of the latter island. And as we proceed eastward, at the most remote points of Malay intercourse in the Pacific, we find the word changed to *buaka* in the Tonga, *boi* in the Vanikoro, while it is almost lost in the *puaka* of the Sandwich islands.

BABINET, JACQUES, a French savant, born at Lusignan, March 5, 1794. He abandoned the profession of law, which had long descended in his family from father to son, for the pursuits of science. He studied in the best schools of France, and during the military commotions of 1814, served as an officer in a regiment of artillery. After the restoration, he became professor of physics in the college of St. Louis in Paris, and in connection with Arago and Fresnel zealously devoted himself to the study of meteorological and mineralogical optics; and the archives of the academy of sciences and of the Philomathic society contain many valuable memoirs by him, upon this branch of science, and also upon terrestrial magnetism, the theory of heat, and the measure of chemical forces. An ingenious mechanician, he made great improvements in the construction of the pneumatic machine, and of atmometers, hygrometers, and goniometers.

BABINGTON, ANTHONY, an English conspirator in behalf of Mary Queen of Scots, beheaded Sept. 20, 1586, was a gentleman of an ancient and opulent family, the eldest son of Henry Babington of Dethick house, in the county of

Derby, England. This branch of the Babington family was Catholic, and smarted under the persecutions to which the members of that communion were exposed in the days of Elizabeth. When hardly 20 years of age, Anthony became the leader of a band of zealous and enthusiastic youths, who had associated together to promote the Catholic cause. In course of time, the misfortunes of Mary forced her to flee to England as a suppliant, where, instead of being treated as a guest, she was arrested and imprisoned as a criminal. The place of her captivity was not distant from Dethick house. Her romantic history, her fascinating beauty, her religion, her sufferings, all combined to render her an object of peculiar interest to Babington and his associates, and to raise their feelings in her behalf to the highest pitch of sympathy and devotion. They determined to rescue Mary from her prison, but, while they prepared for the execution of their scheme, a traitor among them communicated daily to Walsingham all their plans and proceedings. When the secretary had obtained every detail, he issued his warrant for the arrest of the whole band. The greater number of them were seized instantly. Babington, disguised as a peasant, eluded his pursuers, though but for a short time. When brought to trial he did not deny the crime, but so far as the plot related to the liberation of Mary, he gloried in it; and so far as it concerned the assassination of Elizabeth, he approved it. It was no crime in his estimation to take the life of a sovereign who had stript him and his brethren of all their political rights, and reduced them to the condition of helots in the land of their fathers. His fellow-conspirators, to the number of 18, were tried, sentenced, and executed some with him, and some on the day following. Babington was married, but had no children.

BABINGTON, WILLIAM, an English physician, born near Coleraine, in Ireland, June, 1756, died May 29, 1833. As a physician his talents were of the highest order, while as a man of science he was eminent in chemistry, botany, and geology. To him is mainly due the formation of the geological society in 1810. He published a systematic arrangement of minerals (London, 1795), and a new system of mineralogy (1799).

BABO, JOSEPH MARIA VON, a German dramatist, born at Ehrenbreitstein, Jan. 14, 1756, died Feb. 5, 1822. His best work is *Otto von Wittelsbach*, which is, after Goethe's *Goetz von Berlichingen*, the best historical tragedy on the German stage.

BABO, LAMBKET VON, a German practical and scientific agriculturist, born at Mannheim in 1790. He has written especially on the nature and culture of the vine.

BABOIS, MARGUERITE VICTOIRE, a French poetess, born at Versailles, Oct. 8, 1760, died at Paris, March 8, 1839, began to write at the age of 80, on occasion of the loss of a beloved daughter. Her "Maternal Elegies" first appeared in 1805. They are tender and sad, and

the versification very sweet. Their success afterward led her to publish her "National Elegies," and, just before her death, a poem of a more profound character on human life.

BABOO, a title in Hindostan, equivalent to the English "Mr.," and usually applied to native gentlemen of wealth, education, and influence—as the Baboo Mutty Loll Seal, the Baboo Dwarkanath Tagore. The Baboos are distinguished by their generosity, hospitality, public spirit, and family pride, by their liberality in religion, politics, and social intercourse, and their "progressive" tendencies. Most of them take an active part in commercial affairs, and thus largely add to their considerable inheritances. Among them are to be found all men of mark in the merchant caste—the banyans, or bankers, and confidential brokers—men of large and ready capital, whose means, for the most part, constitute the immediate resources of the foreign trade. Of such was the Baboo Ashootas Dey, who died in 1855; and of such are the Baboos Kalidas and Rajinda Dutt, and several of the Mullick family. It is among the Baboos of Calcutta that the "Young Bengal" party, an influential class of social, religious, and political liberals, finds its most active adherents. These mingle continually in friendly intercourse with sahibs, or Europeans of good standing, partake of their ideas, and gratefully court their applause, which is at all times the Baboo's sufficing motive for acts of munificent liberality in the endowment of works of public utility, whether in the cause of education, charity, or internal improvements. The Baboo Dwarkanath Tagore was the founder of an asylum for blind natives, and the generous patron of every charitable institution in Calcutta; and the Baboo Mutty Loll Seal made public proffer of a dowry of 1,000 rupees to the first Hindoo widow who should have the courage to break through the ancient prejudices of caste, and marry a second time. The Baboo Ashootas Dey was widely known as the American banker; and the Baboos Kalidas and Rajinda Dutt are honored with the confidence and friendship of American houses in the East India trade. Rajinda, the younger of the brothers, is a man of polite education and literary tastes, beside having good practical knowledge of medicine. The free-thinking notions of the "Young Bengal" Baboos have led many of them into confirmed infidelity; and only the legal disabilities attaching to infringements of caste—not to speak of the grave inconveniences, in a social point of view—induce these to keep up a pretence which, at heart, they scorn. The Baboos entertain their foreign friends in a spirit of ostentatious rivalry, and there is always a familiar attendance of Europeans at their extravagant festivals. Their garden-houses are furnished with much splendor, and adorned with imported cabinets, pictures, and statues, without regard to cost, though with but little discrimination; in fact, the taste of the wealthy European is the pattern to the

ambition of the modern Baboo. What Major Sleeman, the suppressor of Thuggee, said of the people of India at large, applies with particular force to the Baboos of the presidencies: "If, by the term 'public spirit,' be meant a disposition on the part of individuals to sacrifice their own enjoyments, or their own means of enjoyment, for the common good, there is perhaps no people in the world among whom it abounds so much as the people of India." In 8 years the Baboos of the north-west provinces contributed 936,596 rupees to the erection of wells, tanks, bridges, and canals. One native gentleman at Furruckabad built a bridge at the cost of 70,000 rupees. Up to the breaking out of the Sepoy revolt of 1857, the Baboos manifested, in a substantial manner, their interest in the application to India of railroads and electric telegraphs.

BABOON, a division of the monkeys of the old world, belonging to the genus *cynocephalus* of Cuvier. This genus is characterized by the position of the nostrils at the very end of the muzzle, which is lengthened and truncated; the teeth are 32 in number, as in man, but the canines are remarkably strong, and the last lower molar has a fifth point; the ridges over the eyes are very distinct, and the occipital crest for the origin of the powerful muscles of the skull and jaws is as large in proportion as in the true *carnivora*; the face is lengthened, giving the appearance of that of a dog, whence the generic name, and in the adult is marked with longitudinal furrows. All the species have cheek pouches and callosities. The baboons are among the largest of the *quadrumana*, and their strength is enormous; their disposition is fierce and malignant, and their habits are of the most degraded and disgusting character; they hardly possess a good quality, and are almost always rebellious in confinement and dangerous when at liberty. They are semi-terrestrial; from the nearly equal length of the fore and hind limbs, they run well on the ground, and are also excellent climbers; their anterior extremities are remarkably powerful; their dispositions are exceedingly fickle, and they pass on the slightest provocation from a pleased condition into a paroxysm of rage; in a wild state they are very cunning, and when attacked are most dangerous enemies; when trained from their youth, they exhibit a considerable degree of docility; but they can never be trusted. Their native country is Africa; their food is principally vegetable, consisting of fruits, roots, and the tender twigs of plants; occasionally eggs and young birds are devoured by them; in a state of captivity they will eat almost any thing—with their great strength and fierce dispositions, it is fortunate for man that they are not carnivorous; if they were, their canines would make them more formidable than the lion and the tiger. In some species the colors are bright, and the fur long and fine, forming a kind of mane on the upper parts. They are generally divided into 2

groups: the baboons proper, with long tails, the genus *cynocephalus* of Cuvier; and the mandrills, with short tails, of which Brisson has made the genus *papio*. There are 6 well-marked species: I. The chacma, or pig-faced baboon (*C. porcellus*, Desm.) is a native of Africa, in the neighborhood of the Cape of Good Hope. The color is greenish or grayish-black above, palest on the flanks and fore part of the shoulders; the hair on the neck of the male adult is long, in the form of a mane, whence Geoffroy's specific name of *comatus*; the face and extremities are violet black, paler round the eyes; the upper eyelids are nearly white; the tail is long and tufted. This animal is exceedingly ferocious, even when brought up from youth in captivity; in its native haunts it hunts greedily after scorpions, which it devours alive in great quantities, having first, with exceeding quickness, broken off the end of the tail containing the sting. II. The dog-faced baboon (*C. hamadryas*, Linn.), an allied species, inhabits Africa, and the borders of the Persian gulf in Arabia. The color is blackish-gray, tinged with brown; the hair on the fore parts is very long and shaggy; the face is flesh colored; the females and young have short muzzles, of a bluish color. It is equally fierce and dangerous with the preceding, of which by some authors it is considered a variety. III. The Guinea baboon (*C. papio*, Desm.) inhabits the coast of Guinea. The color is brown above, paler beneath; the cheeks are yellowish; the face, ears, and hands are black; the nasal cartilage exceeds the jaws in length; the upper eyelids are white. In the young the muzzle is shorter than in the adult, in this as in all the other species. This animal is of large size, and very fierce. IV. The little baboon (*C. babuin*, F. Cuvier) is supposed by its describer to be one of the *quadrumana* adored by the Egyptians, and frequently seen among their hieroglyphics, and is probably the *simia cynocephalus* of Linnaeus. It inhabits northern Africa. The color of the male is a uniform yellowish green above, paler beneath; the face is livid; the nasal cartilage is not longer than the upper jaw; the tail, though raised at its origin, is of considerable length, reaching below the hams. The next 2 species, forming the genus *papio* of Brisson, have the tail very short (almost a tubercle), very large ischiatic callosities, a more elongated muzzle armed with formidable teeth, a greater size, and the most fierce and disgusting characters of the baboon tribe. V. The ribbed-nose baboon (*C. mormon*, Desm., or *C. maimon*, Linn.) is a native of the African Gold and Guinea coasts, and is not uncommon in menageries. The colors of the adult are rich, and their effect is increased by the blue, red, and purplish tints of the face, nose, and naked parts of the skin; in the young the fur is of a uniform tawny green, paler beneath, and yellowish on the cheeks; in the adult male, the color is olive-brown, mixed with gray above, and white beneath,

with a yellow beard, and the furrowed muzzle of a livid blue, with a bright red nose and dull flesh-colored lips; in the young the furrows do not appear, and the tints of the naked parts, as in the females, are less vivid. This species is usually called the mandrill, one of which was so well known in London about 20 years ago, under the name of "happy Jerry." This animal, though gentle to his keepers, was easily exasperated by strangers. He was excessively fond of gin and water, and apparently so of smoking tobacco; he obeyed his master's orders with the utmost gravity and composure; his strength was enormous, equal to that of two men; his principal food was vegetables, which he preferred cooked, though he was also fond of cooked meats. The mandrill recedes much in form from the typical quadrumanus, and approaches the carnivora in its structure, instincts, and appetites; it has been known to tear to pieces and devour living prey, with the ferocity of a tiger, and it is hardly possible to imagine any thing in a brute form more repulsive and degraded than the appearance of this species. VI. The drill (*C. leucophaea*, F. Cuv.), also a native of Africa, is nearly as fierce and powerful as the mandrill. The color above is greenish brown, tinged with gray, beneath white; the face is a uniform dull black, and the muzzle has no furrows; the under lip is red—the females are smaller in size, and of a duller color. Other baboons are described, but not with sufficient exactness and authority to admit of a general recognition. Some species of the genus *macacus*, inhabiting India and its archipelago, have been incorrectly termed baboons; among these may be mentioned *M. silenus*, Geoff.; *M. rhesus*, Geoff.; *M. nemestrinus*, Geoff.; and *M. niger*, Desm. These, with others, are intermediate between the guenons and the baboons, and in some respects resemble the true *cynocephali*.

BABRIUS, an ancient Greek writer, who made a collection of *Æsopian* fables, which he altered into choliambics. He probably lived shortly before the Augustan age. Little was known of his works until M. Minas found a manuscript copy in a convent on Mount Athos, containing 123 fables, which he transcribed, and published at Paris in 1844.

BABUYANES (Tegala, *babuyan*, hog's abode, derived from the Malay language), a name given to a group of volcanic islands and islets, 18 in number, the most northerly portion of the Philippine archipelago. The chief of the group is Calayan, having an area of 120 sq. m.; the next in extent is Babuyan, area 65 sq. m. After these are Camaguin, Dalupuri, Fuga, Panuctan, Manapa, Rijutan, Baring; and Oolumnas del Norte and Oolumnas del Sur, which latter are 6 insignificant islets. The islands produce rice, maize, pepper, and cacao. Iron of excellent quality is found in them; and the forests swarm with innumerable wild hogs, hence the name. These islands are among the most productive of the Philippines, but are liable to frequent and violent earthquakes, which

often desolate them as well as the neighboring province of Batangas, in Luzon, to which they belong. Pop. not enumerated; probably 7,000.

BABYLAS, SAINT, a bishop of Antioch, who died A. D. 251, a martyr to the faith, in the prison at Antioch, under the administration of Decius, who raised the first general persecution of the Christians. Fabianus, the Roman bishop, suffered under the same persecution. Babylas succeeded Zebinas in the ecclesiastical administration at Antioch, and his episcopate was contemporary with that of Demetrius in Alexandria. Babylas, with other bishops of the church in that reign, held their offices with Christian courage, although they knew it was at the peril of life. Babylas had taken a bold stand against Philip, and refused him the graces of the church, because he had come to the throne by murder. St. Chrysostom has written a eulogy on Babylas. Fabius succeeded him.

BABYLON, the capital city of Babylonia, an empire celebrated in Oriental history. It was situated on the river Euphrates about 300 miles from its junction with the Tigris, and near the modern city Hillah, which was built out of its ruins in 1101. The beginnings of this famed city, this "glory of the kingdoms," are involved in the obscurity of antiquity. The name is generally considered to have been derived from Babel, the name of that great monument of postdiluvian civilization. The builders of the tower, of course, had already laid the foundation of the city in the construction of those necessary protections for the large population which must have existed as the basis of so vast an undertaking. But whether, after the disastrous interruption of their plans, in the confusion of tongues, the city was so far deserted as to be permitted to fall into ruins, history gives us but one clue to determine. The fact that the city derives its name from the tower (if it is a fact), indicates that at least the spot had not been so completely deserted that the memory of the event and its locality had passed out of recollection. It would, moreover, be natural that a place possessing so many local advantages should not be entirely deserted, even after the project of Babel had been thrown up. Nimrod is therefore generally set down as the founder of Babylon. Moses seems so to have considered it, for he expressly states that Babel was the beginning of the kingdom of Nimrod. Babel, then, is not to be regarded as an isolated and frustrated labor; but, on the other hand, there went steadily on from that time the growth and formation of one of the mightiest kingdoms of antiquity. It nevertheless appears from the Mosaic narrative, that on the divine arrest of the plans of the Babelites, they ceased to build the city, and Nimrod himself went out into Assyria, and founded the city of Nineveh, for so it is the opinion of learned critics, the passage in Gen. x. ii.: "Out of that land went forth Asshur and builded Nineveh," should be read. The city of Babylon was then arrested at least, in its growth, while the tide of population and empire was turned beyond the Tigris. In

process of time, the tide returned as it came. The building of Babylon was then resumed, and from that time Babylon comes more completely into the realm of history. The Belus of the Greeks, who is set down as the founder of Babylon, if he is a person at all, is most likely this same Nimrod, who might very appropriately be thus styled, when we regard the etymology of the name, as only a corruption of Baal or Bel, which in the Chaldean tongue meant a lord or ruler. More probably, however, this Belus is a myth, and has to do with the religion of the Babelites, rather than with the genealogy of their kings. Babylon, as recommenced and finished, under the Chaldean kings, during a period of 209 years, from 747 B. C. to 538 B. C., may be with some degree of accuracy described, especially with the aid of recent explorations amid its ruins. Babylon was built on both sides of the river Euphrates, which flowed through it in nearly a north and south line, dividing the city as the diagonal of a square, for the 4 corners of the square encampment which constituted the city stood very nearly in the 4 cardinal points. This encampment was 15 miles square, dimensions almost incredible to us, in the consolidation of our modern cities. But much of the city of Babylon was open ground. The wall was thrown around it for protection from the incursions of foes, and therefore Quintus Curtius tells us there was as much arable and pasture-land within the walls, as would raise the grain and cattle for a siege. The wall which surrounded the city, together with the ditch at its base, made a height of 350 feet, while its thickness at the base was 87 feet, and at the top wide enough for four-horse chariots to pass each other. Through this wall the city was entered by 100 brazen gates, 25 on each equal side of the square, and at equal distances from each other. Between the gates and on the walls were towers for the defence of the wall and city, 3 towers between every 2 gates, though some writers make but 250 towers in all. The walls were made of brick and bitumen—a necessity which the region itself imposed. Internally, the city was cut into smaller squares, by streets running completely across the encampment from each gate, making in all 676 squares, having an area of about 28,000 sq. rods each. The banks of the river, in its entire course through the city, were fortified by a wall, and towers similar to those just described. Fronting the various streets were also gates through this wall. The only building worthy of finding a record here is the palace of Nebuchadnezzar, built by that monarch (who figures so extensively in the Biblical history of Babylon) about 600. B. C. This palace was 6 miles in circumference, and was situated in the eastern division of the city. It was surrounded by 8 walls. Three brazen gates gave entrance to it from the city, made of the brass which had been pillaged from Jerusalem, as also were the statues and vessels of silver and gold with which

it was adorned. Its hanging gardens were reckoned, even by the Greeks, as one of the wonders of the world. These were constructed by the king for the gratification of Amytis, his queen, who longed for the mountain scenery of her native Ecbatana, a somewhat difficult acquisition, even for queens, in the low flat country where Babylon was situated. To meet this desire, a large artificial mountain was first constructed, 400 feet high, and terraced on all sides at certain distances, which terraces were reared and sustained on sets of piers, so forming a kind of vaulting, and rising in succession above each other, the whole being bound together by a wall of 23 feet in thickness. Water was drawn up by machinery from the Euphrates below, to irrigate the soil. Here grew the tallest trees, so that seen from a distance, it seemed like a natural forest crowning the precipices of a mountain. This palace, and the temple of Bel, are the principal features which claim the attention in Babylon. Such was ancient Babylon the day when Nebuchadnezzar walked in his palace, surveying the grandeur of his possessions, and said, "Is not this great Babylon that I have built by the might of my power, and for the honor of my majesty?" But Babylon was not destined long to retain the splendor to which it had now reached. Some conception of the size of ancient Babylon may be attained from the fact recorded by Herodotus, that Cyrus having taken it in the night, it was not until 3 hours after sunrise that the inhabitants of quarters distant from the palace, knew that they were living in a Medo-Persian satrapy. A gleam of sunshine lighted up the impending gloom of Babylon for a moment, when Alexander made it the capital of his vast empire; but the founding of Seleucia shut out the last prospect of a restoration to her former grandeur, and Babylon has descended in glory and influence, until she who kept her state in splendor and luxury, "the beauty of the Chaldees' excellency," "the lady of kingdoms," now "sits as a widow on the ground," her desolated habitations trodden only by the foot of antiquarian adventure, while the massive columns that adorned her, and the walls that protected her, are at this hour the habitations and strength of 4 mighty cities (Seleucia, Otesiphon, Al Maidan and Koofa) in as many kingdoms, which in the day of her pride were not in history.—The ruins of ancient Babylon are to be seen in the vicinity of Hillah, a small town on the banks of the Euphrates, about 48 miles south of Bagdad. The whole district has been known from the most ancient times as *Erech* *Babel*, i. e. the Land of Babel. Its distance from the bituminous fountains of Is or Hit is the same as that given by Herodotus, and from Seleucia the same as that given by Strabo. Pietro della Valle, who visited them in 1616, is the first traveller who left a full account of these ruins. Niebuhr visited them in 1763. Mr. Rich, a Briton, is the greatest explorer of this century of the ruins of Babylon, which he

visited on two occasions, 1811 and 1815. The ruins consist of a succession of mounds. Amran is 1,100 yards in length, 800 in its greatest breadth, and 50 or 60 feet above the level of the plain. The greatest mound of all is that called by the natives Kasr. It consists of walls of burnt brick, laid in lime-mortar; inside are found fragments of alabaster vessels, fine earthenware, marble, and great quantities of varnished tiles, the glazing and coloring of which are tolerably well preserved. Here, also, is a large palace with walls 8 feet thick. A third large mound is called by the Arabs *Mujelibe*, or overturned. Near its summit is a low wall composed of unburnt bricks mixed up with chopped straw or reeds, and cemented with clay-mortar, having between each layer of bricks a layer of reeds. Scattered throughout the whole are fragments of pottery brick, bitumen, pebbles, vitrified brick or scoria, and even shells, bits of glass, and mother-of-pearl. The burnt bricks bear inscriptions. Rich found a coffin in the progress of his excavations. It was of wood, and contained a skeleton in good preservation. Under the head of the coffin was a round pebble; attached to the coffin on the outside was a brass bird, and inside an ornament of the same material, which had probably been suspended to some part of the skeleton. Other skeletons were afterward found. On the western bank of the Euphrates is a mound, called by the peasants Anana. Six miles southwest of Hillah is the mass called by the Arabs *Birs Nimroud*, and by the Jews Nebuchadnezzar's prison. Since Rich, Layard has visited the ruins (1849-1851), but he found they gave nothing worth the trouble, and were far inferior to Nineveh. He deciphered the name and title of Nebuchadnezzar, king of the Chaldees, upon the ruins. Many coffins and skeletons were discovered by him. No relic or ornaments were buried with the bodies. Layard thinks these were not purely Babylonian coffins, but belonged to the era of the Seleucids, or post-Alexandrian period. It was his opinion that previous workers had not gone down deep enough, and that the upper strata of ruins belonged to an ancient fort erected over the ruins of Babylon by the Seleucid kings. He accordingly opened tunnels at the foot of the mound. No sculptured stone or painted plaster was discovered. The only object of interest found in Kasr was a fragment of two sculptured gods, with an inscription beneath. In the mound Amran five bowls of earthenware were dug out, covered on the inner surface with letters written in a kind of ink. The characters are in form like the Hebrew, and in some they resemble the Sabæan and Syriac. Mr. Thomas Ellis, of the manuscript department of the British museum, was the first to decipher these inscriptions. The subjects are amulets or charms against evil spirits, diseases, and every kind of misfortune; one of them is an exorcism from the devil and other evil spirits. The writers were Jews, probably de-

scendants of those carried captive by Nebuchadnezzar into Babylon; and they must have been written prior to any known existing manuscripts of the ancient Hebrew or Chaldean, as there are no divisions between the words, nor any vowel points. As to the identification of the ruins, the principal question is whether Birs Nimroud is the ancient tower of Belus, or whether Mujelibe is. Pietro della Valle, Rich, and Layard, maintain that Birs Nimroud is the tower of Belus; Maj. Rennell and Capt. Mignan support the claims of Mujelibe. Rich and Layard say that this latter is the palace and the hanging gardens. The authorities on the ruins of Babylon are: Rich's "First and Second Memoirs on the Ruins of Babylon," 1815 and 1818; Maj. Rennell, "On the Topography of Ancient Babylon in *Archæologia*," vol. xviii.; Sir R. K. Porter's "Travels;" "Remains of Babylon," in *Edinburgh Review*, vol. xlviii.; Mignan's "Travels in Chaldea;" Buckingham's "Travels in Mesopotamia;" Ainsworth's "Researches in Babylonia;" Keppell's "Personal Narrative;" Dr. Traill "On Ruins of Babylon," in *Edinburgh Philological Journal*, vol. xix.; "Nineveh and Persepolis," by Vaux; last, but not least, Layard's "Nineveh and Babylon," London, 1853.

BABYLONIA. The empire of Babylonia has been almost as variable in extent, as in fortune and influence. Originally, and perhaps generally, we may consider Babylonia to comprise that extent of low land stretching between the Euphrates on the west and the Tigris on the east, and bounded on the north by a line drawn from one of these rivers to the other, where they approach nearest to each other, about 50 miles north of the ancient city of that name, and near the present city of Bagdad, and on the south by the Persian gulf. With the variation of sometimes extending to the east of the Tigris, or to the west of the Euphrates, Babylonia embraced pretty nearly what is now known as the province of Bagdad. North of it lay Mesopotamia and Armenia, to the east the kingdom of Assyria, and on the west were spread the arid deserts of Arabia. Its earlier name was "the plains of Shinar" (Genesis x. 10); and later, when the Chaldeans had obtained the ascendancy in the state, it was called Chaldea, until it was absorbed into Assyria. Isaiah denominates it "the plain of the sea," probably from the fact that being a lowland, it was annually inundated before the dikes of Semiramis were built to shut off the waters of the Euphrates. This overflowing constituted the riches of Babylon, and the Euphrates has been called "the Nile of Babylon." The soil through which both the Tigris and the Euphrates pass before reaching the kingdom of Babylonia, is of a friable nature, and hence the waters of those rivers come laden with a deposit which they annually spread over the entire area of the kingdom, of so rich a character that the farmer counted upon an increase of from 200 to 300 fold, as the yearly reward of his toil. In productions, both for

export and consumption, Babylonia abounded. The palm furnished her with fruit, wine, and sugar, while the panicum and sesamum yielded her grain—and her pastures were so fat that the cattle must be taken away from time to time, lest they should be too much fed. She had, however, neither vine nor olive among her vegetable productions, nor timber, stone, or marble, for building. But nature had amply atoned for this latter deficiency in the geological structure of her soil—the clay of the superficial stratum being readily baked even by the sun into bricks sufficiently hard for the usual purposes of architecture—while her wells of petroleum, on the banks of the Euphrates, not far above the ancient city, supplied mortar for the masonry. It was out of these materials, according to Moses, that the ancient tower of Babel was built, as well as the more modern tower of Belus, the palace of Nebuchadnezzar, the walls of the city, and indeed every thing that was built in or around it. For the protection of the northern frontier, a line of wall of similar material had been thrown across from the Euphrates to the Tigris, called the Median wall. Thus hemmed in, the kingdom of Babylonia, consisting of 32,000 square miles of fat brown soil, destitute of mountains, its plains covered with the alluvium of centuries, was cut in every direction with canals for conveying the waters of the Euphrates (which oftener and more abundantly than the Tigris overflowed its banks) to the soil which demanded enriching and irrigation. These canals spreading their complicated network throughout the entire extent of that vast valley, have become classic, with their willow-fringed banks, in Biblical literature, as “the rivers of Babylon,” where the captive Jews with silent harps, sat and wept over the desolations of Zion. The geographical situation of Babylonia was favorable for the commerce which its soil and resources demanded. The Tigris and the Euphrates connected it on the north with Asia Minor, and on the south with India and Arabia, while the eastern banks of the Tigris put it in commercial relations with Persia. And such was the commercial importance of the city of Babylon in the days of Ezekiel, that that prophet calls it “the city of merchants.” The “goodly Babylonish garment” was one of the temptations of Achan, at Ai, and the cloth and carpets of Babylon, as well as her work in wood and stone, were famous among the nations. She was the great commercial depot of the then eastern and western world. The principal cities of the empire, next to Babylon, were Durah, Erec, Accad, and Calno.—Having thus given a view of the extent, internal resources, and geographical relations of Babylonia, it is proper here to speak briefly of its history. According to the Bible account, Babylonia was the earliest postdiluvian kingdom. Nimrod, according to Moses (Belus, in the Greek historians), was its founder. But in the dispersion which followed the confusion of tongues, Nimrod, if we accept the translation above suggested of Gen. x. 11,

went beyond the Tigris, and built the city of Nineveh, out of which grew the Assyrian empire. Babylon, thus deserted, takes no rank in the national scale, for several centuries. The next we hear of it is about 747 B. C., when Nabonassar appears to have been the king of Babylon (according to Berosus), probably in some relation of vassalage to Assyria. This is evidence that Babylon had not been entirely lost sight of in the migration of the disappointed Nimrod to Nineveh, and it is quite clear from Is. xxiii. 13, that it had recently been renovated as an Assyrian province, where he refers to it under the name of “land of the Chaldeans.” This circumstance also aids us in determining the chronological and political relations of the Chaldeans to Babylonia, a point which has given much perplexity to Biblical scholars. Nabopolassar is known to be a Chaldean, from the fact that from his time the Babylonian kings are specially designated as Chaldean, and never Assyrian. In him the Chaldeans established an independency of their Assyrian lords, and ruled Babylonia alone. Hence it is evident that before the time of Nabopolassar, the Chaldean power had been slowly increasing at Babylon. From the fact that the similar names, Nabonassar and Nabopolassar, are given by the same historian (Berosus), and the latter is known to have been a Chaldean, we may reasonably presume that the first was also of the same nation. This will accord with the declaration of Isaiah, already quoted, made with reference to a time immediately preceding the attack of Shalmaneser upon Samaria, in which he says that the people of the Chaldeans “were not, till the Assyrian founded it for them that dwell in the wilderness; they set up the towers thereof, they raised up the palaces thereof.” This plainly refers to the renovation of the deserted city of Babylon, for a nomadic people, who were then first established as Assyrian subjects in Babylonia. We may, therefore, conclude that the dynasty of Chaldean kings, though it did not strictly commence until the reign of Nabopolassar, who made war upon Assyria, his patron, and destroyed Nineveh and gave her glory to Babylon, nevertheless began its incipient development in the elevation of Nabonassar, a nomad Chaldean, as the Assyrian satrap of Babylon. This will also agree with the general opinion concerning the origin and character of the Chaldees themselves. They are considered as originating from the mountains of Armenia, north of Babylonia, the great seat of nomadism in that day, and to have been a religious caste. We can well understand this, when we remember that in the days of Abraham the Chaldeans were image-worshippers, and that the Babylonians, while originally worshippers of the sun and fire like the Persians, seem to have had a second phase come over their religion, which does not altogether follow as a philosophical sequence upon fire-worship, viz., the worship of images. This phase in the Babylonish religion was in all probability an important one, and the

period of its appearance so nearly synchronizes with that of the establishment of the Chaldean satraps in Babylon, that we may reasonably presume them to have been simultaneous. The Chaldeans in Babylon were then from the first a religious caste, and religious castes always accumulate and centralize civil power to themselves. From Nabonassar to Nabopolassar then, during a period of 180 years, we may consider the Chaldean dynasty slowly accumulating its power in the religious tyranny of a race of priest-viceroy, until under this latter satrap it had sufficiently matured not only to throw off the Assyrian yoke, but even to absorb thereafter the very name of Assyria into Chaldea, or Babylon. But that even this final separation and absorption was not like the sudden revolutions of modern empires, but gave premonitory signs of change, is evident from the fact that by the policy of Sennacherib, king of Assyria, the Chaldean priest-viceroy was gratified by the appointment of his son, Esarhaddon, as the satrap of Babylon. Esarhaddon made a brief and partially successful struggle to cement this rebellious province to his father's dominions; but the popular sentiment was so strong against him that his reign was followed by the restoration of the Chaldean line, which, in the person of Nabopolassar, as already recorded, made itself independent of Assyria, and in alliance with Cyaxares, of Media, made war upon and conquered its rulers—and from that time to the invasion of Cyrus, the history of Assyria and Babylonia are one, and are so written in this article. From this time Babylon is to be regarded as assuming its originally contemplated attitude, as capital of the eastern world, while Nineveh sinks slowly and surely to the position from which Babylon had just risen. In the reign of Nebuchadnezzar, the son and successor of Nabopolassar, the city of Babylon was rebuilt, and adorned. Then was constructed that royal palace already described (see BABYLON), and the new temple of Belus, on the ruins of the ancient Babel; and the remains of which are now pointed out in the vicinity of Birs Nimroud, in modern explorations. To this period are also to be assigned the hanging gardens, for which Babylon was so celebrated. Under Nebuchadnezzar, the empire of Babylon extended over all the country between Persia on the east and Egypt on the west. By this king the Jews were led into Babylon in the 70 years' captivity, and the sacred vessels and ornaments of the temple, and the treasures of Jerusalem consumed and applied in the magnificent structures of the Chaldean capital. It was Nebuchadnezzar who besieged and destroyed Tyre, who devastated Egypt, and made himself master of the whole country from Migdol to Syene, and threaded the whole of ancient Babylonia between the Tigris and Euphrates with those fertilizing canals that bore on their bosom to every acre of the soil the wealth of the husbandman and the strength of the empire. From this monarch the sceptre of Babylon descended to his son

Evilmerodach, and from him to Belshazzar (mighty prince of Bel), whose reign was disastrously cut off by the invasion of Cyrus, and the destruction of the city (588 B. C.). Thus ended the Chaldean dynasty, and so the history of Babylonia, which thenceforward becomes a province of the Medo-Persian empire, under which its succeeding fates will be traced. At present Babylonia is a pashalik of Turkey, and has truly "become a desolation among nations." From the luxury and licentiousness of Babylon in her palmy days, and the complete destruction into which she had already fallen in the days of John, the writer of the Apocalypse, her desolate condition is figuratively applied to the speedy downfall of some religious system or tenets, prophetically foretold by him in the Apocalypse. The same term is opprobriously applied in sectarian controversies by Catholics and Protestants reciprocally, until Babylon is in our own language nearly synonymous with "all abominations."

BABYLONISH CAPTIVITY. In ancient times it was the custom of conquering nations to remove the inhabitants of a conquered country into their own cities and towns, or to colonize them in some hitherto unsettled part of their dominions. This custom grew out of civil and geographical conditions. The degree of national intercourse requisite for maintaining a proper ascendancy over the subjugated nation could not be maintained if they were allowed to remain in their own land. Local associations were stronger then than now, or, rather, they were more connected with religious feeling than is now the case among Christian nations; and, if conquered nations were left alone, conspiracies would grow up among them, which would end in open, and, in case they were distant from the home government, successful rebellion. Consequently, deportation was necessary—a process which has come to be designated in our language by the word *captivity*. Anciently, deported nations were not treated with that cruelty we are in the habit of associating with the captive. The captivities of the Jews, which are more especially to be treated in this article, demand the preceding remarks in order to aid in a proper understanding of the frequent notices we find in the Scriptures of the consequences to which these people attained in their foreign residences. There are two Babylonish captivities of the Jews, having their beginnings at different times, although their endings were synchronous. To understand how a people so united in civil and religious interest should have become so divided as to share a different national fate, we must look a little at their geographical conditions, and their consequent relations to each other, and the surrounding nations. The land occupied by the 12 tribes, in their settlement after the exodus from Egypt, is divided into 8 parts, by topographical characters. The river Jordan and the Dead sea separated the land into 2 great parts, the eastern and the western,

while in the western part a still further division into northern and southern was effected by the huge spur from the Libanus range of mountains, extending from the head of the Dead sea quite across to the Mediterranean. The eastern part, already mentioned, and the northern half of the western, were easily open to the inroads of the foreign powers which lay to the east and north, while the southern half was fortified on every side by natural intrenchments. The sea was on the east and the west, the mountains of Ephraim and the heights of Benjamin on the north, and the Arabian desert on the south. This strongly fortified position was occupied by Judah and Benjamin together, with the (civilly) unimportant tribes of Simeon and Dan. In the civil dissensions which followed the death of Saul, and which culminated not until the death of Solomon, the tribes north of the mountains, and those east of Jordan, separated from the rest, leaving Judah and Benjamin in the naturally fortified province of the south. To the north of the revolted tribes lay the kingdom of Syria, then powerful and extensive. Syria had an old feud with Israel, ever since David had made Damascus, the Syrian capital, tributary to himself. Rezon had regained the city under Solomon, but was "an adversary to Israel all the days of Solomon." The attention of Syria was now turned to the defenceless condition of the revolted tribes. They had no longer the fortifications and fastnesses from which David had sallied forth to the northern plains at the foot of the Anti-Lebanon. Judah had, meanwhile, made a treaty, in the reign of Asa her third king, with the Syrian power, who, by his counsel and stratagem, had been induced to break a former league with Israel (1 Kings xv.). Judah also, fearing inroads from the north, had built 2 new fortifications in the passes of Benjamin (Geba and Mizpeh), and constantly used all her arts to keep herself in favor with Syria, pacifying its monarch, on needful occasions, with magnificent presents torn from the temple and royal palace, and on the other hand turned her pampered ally against the revolted and unprotected tribes at the north. Israel, tired at length of the continual exposures to Syrian invasion, and exasperated at the immunity and prosperity of the rival Judah, formed a conspiracy with Syria (during the reign of Pekah in Israel and Ahaz in Judah) against her southern antagonist. In the emergency Judah appealed to the Assyrian power, whose relations with Syria were of such a nature as easily to be affected by the munificent bribes which Ahaz had always at command in the inexhaustible treasures of the temple. Tiglath Pileser came against Israel, and carried captive a portion of its inhabitants, and then marched upon Syria, slew its king, subdued its capital, and absorbed it into the Assyrian empire, from which it reappears only in the time of Alexander the Great; and the successor of Pileser, exasperated by an attempted conspiracy of

Hoshea with the king of Egypt, took Samaria, and subdued Israel to a tributary relation, taking away to Babylon the people whom Pileser had left in the first deportation. Thus was accomplished the first captivity, of the numerically most powerful branch of the divided house of Israel (721 B. C.). They were first in the subjugation to foreign power from purely geographical considerations. A little more than a hundred years after, Judah, from her mountain fastnesses, followed Israel into the Assyrian empire, in the second great Babylonish captivity. Disregarding some chronological differences, Judah seems to have been progressively carried into captivity, like Israel, by at least 2, and perhaps 3 successive deportations. The first was 598 B. C., and was probably made with the direct object of colonizing the city of Nineveh, which the Assyrian monarch was then endeavoring to restore. The second was in the reign of Zedekiah. Judah had for 8 successive reigns been heavily tributary to Assyria. Zedekiah rebelled against the tribute, and, like Israel, further exasperated her master by calling upon Egypt in her extremity. In revenge, Nebuchadnezzar burnt the temple and city, put out the eyes of Zedekiah, and led away the people to Babylon, and so ended the Jewish kingdom (586 B. C.), never again to be restored to a national existence; for when, 70 years after the second captivity, the permission to return was given, only a very small part of the Jewish people were in a condition to desire a removal, having become so thoroughly naturalized in their foreign dwellings; and even if they had desired it, it would have been only a return to a Medo-Persian satrapy, and not to the glory of their ancient kingdom and temple-worship. They remained by the rivers of Babylon and wept.

BAC, THÉODORE, a French lawyer, born at Limoges in 1808. In 1837, he was one of the collaborators of the *Journal l'Europe monarchique*. He was for a long time counsel for the defendant in most cases where the press was indicted. After the revolution of 1848, M. Bac was sent as deputy to the constitutional assembly for the department of Haute Vienne. He took his seat on the benches occupied by the ultra republicans. In the legislative assembly of 1849, M. Bac was chosen for 2 departments, Seine and Haute Vienne, but elected to sit for the latter. After the *coup d'état* of Dec. 2, 1851, he was obliged to quit France, but has since been permitted to return.

BACALHAO, an island on the seacoast of Newfoundland, distant about 1 mile from the mainland. It is elevated, and is nearly 4 miles long by 1½ broad.

BACCALAUREUS. The derivation of this word, and its most usual application to the first college degree, have been treated of under the title, *ARTS, DEGREES IN*. It has 3 other meanings, viz.: a canon of inferior rank; and knights who had not a sufficiently large following to lift their own banner, and who, consequently,

followed the banner of some wealthier baron; also esquires who wished to become and were qualifying themselves to become knights.

BACCARA, a French game of cards which somewhat resembles lansquenet. It offers no intricacies, and its only interest depends on the money at stake. At the head of a long table divided into 2 parts by a line drawn lengthwise, a man called the banker sits with several packs of cards in his hand; the players, or, more properly, the betters, stand around. The banker draws cards, putting one for the betters on the right, another for himself on the left; and the party wins whose card or cards bring 9 points, or the nearest number to it, each party having, of course, the privilege of calling for supplementary cards to improve his number.

BACCARAT, a town of France, department of Meurthe, the seat of the principal manufacture of flint glass in that country. The manufacturing business has been on the increase since 1815, and the annual product of pressed or uncut glass is valued at more than \$300,000. The workmen and their families are lodged in the establishment, which directly or indirectly gives employment to nearly one-third of the whole population of the town, amounting to 3,216.

BACCHANALIA, the secret festivities in Rome in honor of Bacchus, which are mentioned after the 3d century B. C., and were celebrated first by women exclusively, later by males and females, with frequent drinking and such licentiousness that, in 186 B. C., the authorities intervened, and after a careful examination, forbade them under the severest penalties, as utterly dangerous to the welfare of the state. There is a "Senatus Consultum," or senate decree to that effect extant to this day. But they were, no doubt, continued secretly, and even became more licentious. Nobody was initiated over 20 years of age, and the women who indulged in these mysteries had a bad name even in a period of so low a moral tone as that of the Roman emperors.

BACCHANALIAN SONGS. The first Bacchanalian songs were the hymns sung at the Greek mysteries and festivals of Bacchus. Those of the earliest age, still bearing the impress of an oriental origin, specimens of which occur in the Orphic and similar hymns, are dignified and mystical. When, however, these solemn rites became more public, and gradually changed to maddening orgies, the character of the songs changed also. Then, as Faber informs us, the worshippers strove to urge each other to excesses of daring licentiousness. When, finally, the Dionysia had fairly become the Bacchanalia, and a goat was publicly offered as a prize to the one excelling in these songs, their dissoluteness attained its highest pitch.—Greek art, which stripped from old mythology its mysticism, and completely reclothed it in an entirely objective yet singularly beautiful garment, while leaving to the

vulgar or old-fashioned devotees among the people the original Bacchus, formed a new one for itself just as it formed a new Venus and a new Jove. Archilochus, Mimnermus, and Theognis, were apparently the first Greek poets of note who thus sang of love. These appear to have formed Anacreon (525 B. C.), the great master of Bacchanalian song. "The drinking songs of Anacreon," says O. A. Elton, "have all the gayety of their subject, without any of its grossness. His assumed philosophy, however irrational in itself, gives a dignity to his manner; and there is a pathos in the thought of fleeting life, which perhaps constitutes the secret charm of many of these effusions of voluptuousness." No translation can give an idea of the exquisite grace and elegant sincerity of his tributes to the power of wine.—Pindar's "Dithyrambs to Bacchus," now lost, appear to have been gems of wine songs. The "Anacreontic of Bacchylides," and the "Ode of Callistratus," which were sung convivially, are truly exquisite, as is also "A Health," by Meleager, which is much in the rollicking spirit of many modern lays. Greek poetry relating to wine and Bacchus appears to have expired with the colossal effort of Nonnus of Egypt, who, in the 5th century, wrote 48 books of Dionysiacs, in which, singularly enough, we have a return to the old faith which makes Bacchus the great central god.—Among the Latins there can be no doubt that the exquisite lyrics of Catullus were in their day sung over wine, but the first and most perfect specimen of a Bacchanalian poem is the "Tavern Dancing Girl," among the minor pieces of Virgil. In it two Roman gentlemen, who have been plodding a weary way "through cloudy dust, in summer's scorching day," meet a beautiful "Syrian girl who haunts the taverns round," and in her company refresh themselves at a first-class drinking place. There is a hearty gusto of dissipation in this poem, not surpassed by any production of the kind. Of all the Romans, Horace was, however, emphatically the Bacchanalian poet, commending drinking in a downright manner previously unknown to the luxurious orientalized wine-singers of antiquity. In Ausonius we perceive a flavor of the coming beery Teutonic middle ages, which he perhaps owed to the inspiration of the beautiful German, Bissula.—The middle ages were, however, prolific in wild drinking songs, the most celebrated being that by Walter Mapes, chaplain of Henry II. of England—*Mihi est propositum*—written in the 12th century, sung to this day in German universities, and of which the following is a free translation:

CANTILENA POTATORIA.

In a tavern let me die when life's journey endeth,
Be the wine-cup brought to me ere my soul ascendeth,
That the holy choir above, as it o'er me bendeth,
Well may praise the drinker stout whom it to God commendeth.

Brightest souls on earth below have by the goblet thriven,
Hearts imbued by nectar strong to realms above are driven;
Sweeter tastes my wine to me in a tavern given,
Than the bishop's pious tap well with water shriven.

All my verses have the smack of the liquor by me,
But if you would see me write, with a supper try me !
Till I've had a bite or two I am never rhyme-y,
But with half a dozen cups Ovid can't come nigh me !

Nature hath to every man proper gifts allotted,
Fasting I can never write, nor unless besotted;
Hungry, even by a boy I might be garrotted,
Ere I'd thirst I'd let me first in a hearse be trotted.

In my soul the sparkling fount of prophecy outwelling,
Ne'er was felt until with wine my every vein was swelling;
But when Bacchus in my brain holds his lordly dwelling,
Phœbus rushes into me glorious marvels telling.

For the credit of Mapes it should be stated that he puts this song into the confession of a beautiful ideal of a reprobate. The monk-Latin Bacchanalian songs of the middle ages are innumerable; specimens may be found in the *Poesies Populaires Latines* of Du Meril, *Nuga Venales*, 1730; in the *De Generibus Ebricorum*, in the *Facetia Facietiarum*, in the *Antidotum Melancholia*, and in many other quaint jest-books of rude Latin, in company with mock treatises *de jure potandi*. One of the most remarkable contributions to wine-poetry during the later age, when every merry scholar wrote something of the sort either in Horatian or Leonine measure, is the poem *De Arte Bibendi*—"On the Art of Drinking," by Vincentius Obscopus, a truly elegant, Epicurean production in 8 books.—An account of German Bacchanalian song writers would include the names of all the poets of that country, since in no part of the world is drinking so much accompanied by singing. Gleim was among the first to imitate Anacreon, while Goethe, Schiller, and Heine, have in bolder flights given us wine songs of striking originality. The *Rheineislied* of Claudius will, however, always remain the most characteristic German lyric of this description. The drinking songs popularly sung in Germany are mostly by Müller, Justinus Kerner, Langbein, Kopisch, Goethe, Schiller, Uhland, Lessing, Schenkendorf, Arndt, Hebel, Heine, Mûchler, Ludwig, Körner, Förster, Albert, Novalis, Fink, Schreiber, Günther, Hölty, Schmid, F. Haug, Rochlitz, Von Schlippenbach, Geibel, Stollberg, Blumauer, Weisse, Fallersleben, Bürde, Neumann, Wies, Hornbostel, Böhm. To these might be added the names of many more recent writers, whose lyrics, however, are not so firmly established. Germany can probably boast of more anonymous and eccentric table-songs than any other country.—French Bacchic lyrics begin with the troubadours and trouvères, whose writings abound like those of the Minnesingers, in vinous inspiration. The poems of François Villon ring with the fine chime of glasses; the whole of Rabelais's works are steeped in wine, so that a critic might call them one long song of the bowl, with the endless refrain of "drink, cool and fresh!" Marot, D'Orleans, and Du Bellay, all left lyric and convivial flashes. It would be impossible to give with any accuracy an idea of the Bacchanalian minstrelsy of France, so prolific and yet so fleeting is its character. The popular songs occurring most frequently in old collections are many, by Maître

Adam, the joiner, Chanlieu, Lafare, Bouffier, and by the author of *Désirs Bacchiques* and *Le Panpan Bacchique*. Dufreny, Pannard, and Collé may be regarded as the more modern restorers of French Bacchic songs, but they have been supplanted by Desangiers, and more especially by Béranger, the great minstrel of modern France.—Modern Italy has never been a land eminent in drinking-songs, and its Bacchanalian lyrics generally, with the exception of some spirited *canzoni popolari* in the dialects, are modelled after the classics (as the *Bacco in Toscana* of Redi), or in more recent days after the French.—The Scandinavian, and still more, the Slavonic tongues, particularly Bohemian and Croatian, have many genial lays, akin to German and English, in wild humor. Collections of Lithuanian, modern Greek, and Armenian songs, are not without some curiosities in this kind.—If we wander to the East we find, however, in Persia and in the lyrics of Ferdusi, the modern Mirza Shaffy, and his prototype, Hafiz, the very *no plus ultra* of such songs, those of Hafiz not being inferior in any respect to those of any poet of any nation, as he sings—

My drunkenness is not a fault of mine,
For drunken came I from the head divine,
Which kneaded up my nascent clay with wine.
Therefore, when, dry and hard, I fainting lie,
No moisture suits me like the yeasty wine.

—But it may be fairly claimed that, of all languages, the English possesses at least the greatest variety of these lyrics. In its earlier stages it abounds with jovial, hearty staves, dedicated, it is true, rather to Cambrinus, the saint of ale, than to Bacchus, but these are inimitable. All the world knows the "Jolly good Ale and Old" of Gammer Gurton's "Needle," and the "Lamb-er Bottel" and it surely knows nothing better of their kind. Chaucer and Skelton exhibit this genial feeling, and it peeps out of many a black-letter carol and Christmas lay, ringing in quaint phrase through the Gothic feasts which imagination recalls, until the holly and ivy wreaths quiver:

'Tis merry in hall
When beards wag all;
And welcome merry Shrove-tide.

Need we speak of Shakespeare, and the revelers of the Mermaid, all of whom gave forth their drinking-songs or catches so merrily! or of Herrick, who lacked but little of being the English Anacreon? The Jacobite songs of a later era, though political, are all desperately steeped in wine and strong waters, but it is first in Burns that we find a revival of the hearty old English drinking-lyric. In this style, too, Capt. Morris had a rich talent but little known at the present day. Thomas Moore, however, the English Hafiz, gained, and as yet maintains, the leading position of the British Bacchic laureate. Contemporary with Moore we have Maginn and sundry other Celts, who will not be forgotten while conviviality claims a poet. In America, where men sing less at table than elsewhere, some popular Bacchic

nalian songs have been produced, but they can hardly be said to form a distinct or original department in the literature of the country.

BACCHANTES, in early antiquity those women who took part in the nightly and secret festivities in honor of the god of wine; subsequently, when males were also admitted, the term was applied to all those initiated into the Bacchanalia. In the slang of mediæval university students, the name was given to the juniors or beginners who had not yet completed their first years' studies, and under imposing rites and plausible pretexts were taxed for drinking purposes, initiated into debaucheries, and abused and maltreated by the seniors. Later the name was applied to those students who never began to study, but continued in debauchery, and in order to avoid working for a subsistence, wandered about begging under the pretence of collecting the means for future studies. They were organized into bodies with constitutions and rituals, more for amusement than for protection, because this nuisance was generally tolerated, and their jokes paid for their fare. There were even, in many cities, public boarding houses established for them, and with country ministers and physicians they were great favorites. Sometimes they managed when growing older to become school-teachers or inferior and auxiliary teachers at universities, and it was a recommendation for a high school to have many such scholars. For heavy fees in drink they even gave instruction in the secret arts of their wandering life to younger students who, under the title of *Tirones*, acted as their servants, and even had to steal and to beg for them, and were cruelly treated. There still exist in German 2 autobiographies of such Bacchantes, Burkard Lingg and Thomas Plater. The reformation stopped this custom; but some traces of it were continued in Germany and England down to the 19th century.

BACCHIGLIONE, a river of northern Italy, about 90 miles in length, which rises to the eastward of Trent, and flowing past Vicenza and Padua, empties into the lagoon of Venice below Este. Large boats ascend it to Vicenza.

BACCHINI, BENEDETTO, a Benedictine monk and an eminent scholar, born Aug. 31, 1651, at San Donnino, in Parma, died Sept. 1, 1721. In 1689, he was appointed to the office of preacher, and during the next 7 years his eloquence instructed the faithful in various cities of Italy. In 1686, with the assistance of Gaudenzio Roberti, a learned Carmelite monk, he published, at Parma, the first number of the *Giornale dei Letterati*. But calumnies and misrepresentations against him had such influence with the duke that, in 1691, he deprived him of the office of state theologian, and ordered him to leave Parma within 8 days. In less than a year, Francis II. of Modena had appointed him his historiographer, and at Modena he resumed the publication of the *Giornale dei Letterati*. In 1706, he undertook a journey to Rome in order

to obviate, if possible, the opposition of the papal court to his publication of the ecclesiastical history of Agnello, archbishop of Ravenna, in the 9th century, and succeeded. He ultimately became abbot of his monastery, and attained the highest dignities which his order could bestow, in Modena and Ragusa. But he presumed to defend the rights of his community from the encroachments of the crown, which so enraged the duke, that he banished him. He was thus compelled to lead for years the life of a wanderer, and would have died one, had not the university of Bologna taken compassion on his old age, and given him a refuge until his death.

BACCHIUS. I. The name of a tri-syllabic metre, consisting of 1 short and 2 long terms ('- -). II. The author of a short musical treatise in Greek, whose place and time of birth are unknown. He wrote an "Introduction to the Art of Music," in the form of a catechism, apparently intended for the use of schools.

BACCHUS (Gr. *Bakchos*, or *Iakchos*, or *Διόνυσος*) was, with the ancients, the god of wine, and, in some regions, of song, joy, and theatricals, also, as well as the protector of fruit-trees and of fruit. Scarcely any rites were spread over so large a portion of the ancient world as those of this divinity. It is, therefore, difficult to settle the question where they originated. The religious tradition of the Greeks makes Bacchus the son of Zeus and Semele, the daughter of Cadmus. The jealousy of Hera sought to destroy the mother with her unborn son, and she advised her to persuade Zeus to appear before her in his real form. She perished in consequence, and Zeus, anxious to preserve the stillborn child, inclosed him for 8 months in his thigh, and thus brought him to maturity. He then gave him to Ino, the sister of Semele, and her husband Athamas, to bring up, and when Hera had rendered them crazy, to the nymphs in Thrace. Thus he was reared in Nysa, and, when grown, taught the cultivation of the vine and the preparation of its intoxicating juice, and undertook with the nymphs an expedition to the Orient to spread the cultivation of the grape. He went as far as Egypt and India, where he planted the eastern frontier columns of the world. He made proselytes, not by forcible means and weapons, his followers being armed only with long sticks, called thyrsi, hollow inside, and adorned with colored ribbons, and ivy, and vines; but those opposing him he either made crazy or frightened them into submission by metamorphosing himself into a wild beast. One of his opponents, Pentheus in Thebes, was punished by his mother and her sisters, who became furious and tore him in pieces; the sailors of a vessel, chartered by him for an expedition to Naxos, who fettered him and desired to abduct him to Italy, he punished by causing ivy and vines to surround the vessel and stop its course, when he metamorphosed himself into a lion, and frightened them so that they jumped into

the sea, and were transformed into dolphins. In accordance with this character of Bacchus, the Greeks represented him as a beardless youth, of placid manner, and almost womanly expression and dress. His long woolly hair is tied behind into a knot, some curls protruding over the shoulders, vine and ivy twigs and a frontlet crowning his head. For the most part he is represented entirely naked, sometimes, however, in a wide *palla* or cloak, covering one or the other portion of the body, sometimes with shoes, seldom with cothurnus; often tigers, lions, or panthers accompany him; sometimes he is represented as a bull, this animal being consecrated to him.—But even in Greece, there is such a variety of traditions concerning Bacchus, of rites in his service, and of representations in imagery, poetry, and monuments, that it becomes evident that either his rites were not native there, but imported, as some say by Melampus, from Egypt, or as others, from various other countries, or that the original tradition and service were in later ages blended with various imported traditions and services. There was a *Nysa*, from which his name, *Dionysus*, is derived, not only in Thrace and in Arabia, where, according to another version, Bacchus was reared, but in India, where Alexander the Great, as Arrian with some critical doubts relates, found a *Nysæan* tribe worshipping Bacchus, and ivy growing wild, though there is no wild ivy in most portions of southern Asia. There is also a *Nysa* in Asia Minor, and almost wherever a god of wine was worshipped. But as, after the Greeks became acquainted with the Orient and its religious traditions, they were inclined to identify their national gods with those of the Orient, thereby disfiguring their own ancient traditions and rites, it is impossible to describe with any certainty of correctness the most ancient and original Greek service. Still, probably, it was more chaste and moderate than the later *Bacchanalia*—at least, we nowhere find in the high-toned, moral writings of the philosophers and poets of the best period, such strictures on the immoral results of this cultus as in the age of Greek and Roman decadence. The feasts in honor of Bacchus in the earlier ages seem to have had no other tendency than to relax for a few days every year the restraint of law, to satisfy a certain want in human nature of an occasional carnival, within the limits of taste and decency, and to give the more oppressed portion of the population, the slaves and the women, once a year, an opportunity of unbounded freedom. In midwinter the *Triasteric* festival of Bacchus was celebrated; women marched at night out into the mountains, and there they drank, danced, and ran up and down, clad in doe-skins, or naked and adorned with ivy and vines, and swinging the thyrsus, yelling out improvised songs which commenced and ended with the words *Evvoa*, *Bacche*, or *Iakche*. Male spectators were not allowed, and in several cases men were killed and mutilated for their curiosity.

Such, at least, was the service celebrated in Boeotia, on the Cithæron, and on the Parnassus, by Delphian and Attic women, who had the by-name of *Mænades*, or raging women. The procession was concluded by tearing to pieces a bull, as a symbol of Bacchus—perhaps as a hint at the self-destroying frenzy of passion. Other Bacchic festivities were celebrated publicly, at the expense and under the guidance of the state authorities, at the periods of the vintage, and when, after the first fermentation, the new wine was drunk. These were different in every Greek state; in Athens there were 4 such: 1, the country *Dionysia* at the vintage, when one of the amusements was that boys hopped on one foot upon sacks filled with water and besmeared with oil, and, of course, often tumbled down; and theatrical representations were given; 2, the *Lenææ*, or feast of wine pressing, consisting in a vast collation, for which the state furnished the meat, was a comical procession, with jovial provocations, and theatrical performances—this was the city *Dionysia*; 3, the *Anthesteria*, consisted of drinking festivities in the spring, when after a great public repast the citizens, adorned with ivy and flowers, vied with each other as to who could drink most, followed by a secret sacrifice, at which the wife of the archon *basileus* (president of the executive body), was symbolically married to Bacchus, with a sacrifice on the third day to the gods of the lower regions and the dead; 4, the great *Dionysia*, destined principally for theatrical performances at the expense of the state. The Bacchus whom the Orient worshipped was quite another divinity. He is always represented in long oriental garments, with a splendid cloak, sometimes a crown, or horns and ivy, his feet dressed in cothurnus; sometimes as a warrior, with a short tunic, and a shield of panther skin, with a kingly bearing, tall and dignified. As such he is often identified with *Sesostris*, the Egyptian conqueror of old, who is related to have subjected all southern Asia, or with the god of the sun, on whose rays the excellence of the grape and wine so much depends. It is probable that this oriental service of Bacchus was more licentious than the original Greek, and blended with sexual orgies; at least in the Semitic countries. In Rome, Bacchus had the byname of *Liber*, and after the 5th century B. C. was worshipped publicly in the same temple with *Ceres*, the 17th of March being their great festival. But afterward the original simple and quiet celebration degenerated into the most unnatural licentiousness, and the festival became known by the name of *Bacchanalia*.

BACCHYLIDES, a Greek lyric poet, who flourished in the middle of the 5th century B. C. He was a native of the *Ceian* *Italia*, and a relative and fellow-citizen of *Simonides*. He spent the greater part of his life at the court of *Hero* of *Syracuse*. He and *Pindar* are said to have been envious of each other's fame, and rivals for their patron's favor. The time of his death

is uncertain. The lyrics of Bacchylides were many in number, and of almost every variety. The fragments were collected and published by Neue, at Berlin, in 1832. They are also to be found in Bergk's *Poetica Lyrici Græci*.

BACCIARELLI, MARCELLINI, a modern Italian painter, born at Rome, Feb. 16, 1781, died at Warsaw, Jan. 5, 1818, was employed, in 1758, by King Augustus III. of Poland, as designer of the celebrated Dresden gallery of engravings. After remaining for some time at Vienna, where he increased his reputation by his portraits of the imperial family, and by his "Apollo and the Muses on Mount Parnassus," he was, in 1765, appointed director of the fine arts in Poland, and remained for the rest of his days at Warsaw, principally engaged in paintings connected with Polish history and public men.

BACCIO DELLA PORTA, called, also, **IL FRATE**, and **FRA BARTOLOMEO**, and **FRA BARTOLOMEO DA SAN MARCO**, a celebrated Florentine painter, born, in 1469, at the village of Savignano, near Prato, within a short distance of Florence, died Oct. 8, 1517. He studied under Cosimo Rosselli, and subsequently devoted himself with great enthusiasm to the study of the works of Leonardo da Vinci, to which he is indebted for his admirable knowledge of chiaro-scuro. His first works were of small size, such as his 2 cabinet pictures in the Florentine gallery, representing the "Nativity" and the "Circumcision." In his fresco of the "Last Judgment," in the chapel of Santa Maria Nuova, he adopted a grander style. At this time a great change came upon the artist's mind. He happened to be employed in the convent of St. Marco, when Savonarola was arrested and conducted to the stake. He was an admirer and friend of Savonarola, and his execution preyed so much upon his mind that, in 1500, he entered the convent of San Marco, with the intention of renouncing the world and his art. But his love of art was too strong, and, to the delight of his friends, he resumed his labors in 1504, and was particularly happy in the course of the year, as Raphael came to Florence, with whom he became well acquainted—Baccio instructing Raphael in coloring and the folding of draperies, while Raphael, in return, taught him the rules of perspective. Subsequently, he went to Rome, to study the works of Michel Angelo and Raphael. In the convent where he passed 4 years, are some of his most finished frescoes. In the Louvre are two of his pictures, "The Angelic Salutation" and "The Marriage of St. Catharine of Sienna." One of his finest productions, "A Virgin upon a Throne," is in the public gallery of Florence; also, two prophets, Job and Isaiah. In the Pitti palace is his celebrated single figure of St. Mark, which is described by Winckelmann as a Grecian statue transformed into a picture. In the Quirinal of Rome are 2 of his pictures, St. Peter and St. Paul. The latter was most admired by Raphael, who completed it. In the Doria and Corrinii palaces in Rome are 2 holy families of his, and in

the Braschi palace a marriage of St. Catharine. In the museum of Naples is a superb picture of the Assumption. Munich is in possession of a holy family and a madonna of his. Vienna boasts of his "Presentation to the Temple," Berlin of a sublime Assumption, and St. Petersburg of a St. John and a St. Andrew. Some of his most celebrated works were transferred by Napoleon to the Louvre, but afterward restored to Florence. In the private chapel of the fathers of St. Mark, are many of his paintings, and among them a St. Vincenzo, which is somewhat after the style of Titian. His best and rarest performances are in the possession of the ducal family, including his last and one of his best works, a large picture in chiaroscuro, representing the patron saints of the city, surrounding the Virgin. His designs came into possession of Sir Benjamin West, and afterward into that of Sir Thomas Lawrence, at whose death they passed into the hands of London print-dealers, who scattered them over the world. He was the inventor of a new method of casting draperies, and of the use of the wooden figure, with movable joints. The distribution of light and shadow constitute the great study and the great power of his pictures.

BACH, the name of a celebrated musical family in Germany. In no department of science, art, or literature, has any single family ever achieved such distinction, either from the number of its members who have devoted themselves to the same pursuit, or the talents, genius, and learning which they have manifested in it, as that of Bach in music. Fifty individuals, at least, of this name, whose lives spread over a period of 2½ centuries, would deservedly occupy an extended space in an exclusively musical cyclopædia. A notice of the family, however, with sketches of several of its more distinguished members, is all that our limits permit. As many of them have borne the same Christian names, we are compelled, in order to convey any clear idea of them, to abandon an alphabetical for a chronological, or rather, genealogical, arrangement.—**VEIT**, the founder of the German family of the name, was originally a baker by trade, a Protestant in religion, at Presburg, in Hungary, whence, about A. D. 1600, he was driven by persecution, with his family, and sought a refuge in one of the small cities of Thuringia. He had received a musical education, and was noted for his skill upon the guitar.—**HANS** (Johannes), the eldest son of Veit Bach, and the ancestor of most of those of whom mention will be made, was a manufacturer of tapestry and city musician at Wechmar. He died in 1626, leaving 8 sons: **JOHANN**, born 1604, died 1673, who was appointed organist and director of the city music at Erfurt, which offices he retained from 1635 until his death; **CHRISTOPH**, born 1618, died 1661; and **HEINRICH**, born in 1615, at Wechmar. He was instructed in music by his father until, needing a teacher of greater knowledge, he was sent to his brother Johann at Er-

furt, where, in a few years, he became a very accomplished organist and musician in the fashion of that epoch. He was employed in these capacities successively by the city authorities of Schweinfurt and Erfurt, until he was called, in 1641, to Arnstadt as organist, a place which he filled with great honor for the long period of 51 years, to his death in 1693.—The Bachs of the next, the 4th, generation were 9 in number.—JOHANN AGIDIUS, the 2d and most noted of the 8 sons of Johann, born 1645, died 1717, upon the death of his father succeeded him as organist and director of the city music at Erfurt.—GEORGE CHRISTOPH, eldest son of Christoph, born 1642, died 1697, was cantor and composer at Schweinfurt.—JOHANN AMBROSIVS, born 1645, died 1695, brother of the preceding, a sound theorist, and of repute in practical music, the father of the great Johann Sebastian, was a court and city musician at Eisenach.—JOHANN CHRISTOPH, eldest of the 8 sons of Heinrich, born 1648, died 1708, stands in musical history as one of the very first of German organists, contrapuntists, and composers of his era. He studied music with his father so successfully as at the age of 22 to be called to Eisenach into the service of the court and city, as organist. At the time in which he lived but little music comparatively appeared from the press, and the works of one who lived the retired life of an organist in a small Saxon city could scarcely become known out of his own immediate sphere. His compositions, of which he left a vast number in manuscript, composed for the church and court where he officiated, prove, says Gerber, "that he was truly a great man, as rich in invention as he was strong in the power of musical expression of emotion." A century after his death, at the time when Mozart, Haydn, and Gluck had become models in composition, selections from his works were performed in Hamburg, with great success, exciting no small degree of astonishment by their freshness, beauty, and freedom from the trammels of the dry contrapuntal school. So far as the musical taste of his age allowed, his works in general are found to be melodious and truly vocal, at the same time being remarkably full in harmony and very grand in effect. One of his compositions, dated 1684, is a motet in free style, in which, among the (at that time) novelties of construction and harmony is found the extreme sharp 6th. On the back of the sheet upon which it is written is another piece of sacred music in 22 parts, *obligato*, the harmonic relations of which to the motet are perfect. The list of his works contains also a motet for St. Michael's day in 22 real parts, a piece of wedding music in 12 parts, another motet for 8 voices, instrumented for 2 choirs and orchestra, a solo for an alto voice with accompaniment for violin, 2 viol di gambas, and bass, &c.—JOHANN MICHAEL, brother of the preceding, 2d son of Heinrich, was born at Arnstadt about 1660, and making music his profession, became organist and city scribe in one of the Thuringian towns. He was an industrious and effective

composer for the church, harpsichord, and organ. One of his vocal works, performed in Berlin recently, surprised every auditor by its beauty and modern coloring. His daughter became the first wife of Johann Sebastian Bach.—The family tree gives 17 Bachs of the next, the 5th generation, of whom the most distinguished were the following:—JOHANN BERNHARD, eldest son of J. Agidius, born Nov. 23, 1674, died June 1, 1749, was organist of the Merchants' church of his native city, Eisenach, of a church in Magdeburg, and, in 1708, successor of Johann Christoph, as court and city organist at the former place. He distinguished himself especially in his choral preludes, and for his overtures in Telemann's style.—JOHANN SERAFIAN, in some respects the greatest musician that has lived, was the 3d and youngest son of J. Ambrosius, born at Eisenach, March 21, 1685, 1 month after the birth of Handel, at Halle, died at Leipzig, July 28, 1750. At a very early age he lost his mother, and had hardly completed his 10th year when his father died also. The little orphan was then placed under the care of his brother J. Christoph, at Ohrdruff, with whom he continued his musical studies and began the practice of keyed instruments—the harpsichord and organ. The lessons of his brother soon ceased to interest him, and he begged the use of a manuscript in Christoph's possession, containing compositions for the harpsichord by Froberger, Kerl, and Pachelbel, the most noted organists of that day, but this was refused him. The door of the case in which the book was kept was of lattice-work, through which little Bach's hand would pass, and, as it was not bound, he was able to roll it up and draw it out. On bright moonlight nights he would take it to his room and copy from it, and thus, in the course of 6 months, he had it in his own hand. It was hardly finished, however, when his brother accidentally discovered it and took it away. The act seems harsh, but doubtless the teacher knew best how to direct the studies of so young a pupil. The boy's pupilage in Ohrdruff was short, being ended by the early death of Christoph. In Europe—in England as well as upon the continent—in our day as in the days of Bach—there is a resource for such boys in the choirs of cathedrals, ecclesiastical schools, and richly endowed churches. English, Italian, and German musical history gives us the name of many a celebrated composer who in youth was a chorister. Bach found a place as treble singer in such a choir at Lüneburg, not many miles from Hamburg, remaining there until his voice changed, with the advantages of excellent school and the best musical instruction, and in the receipt of a small stipend, yet sufficient for his boyish necessities. His enthusiasm for the organ and his zeal for music in other forms and styles, at this period, are sufficiently attested by his foot-journeys to Hamburg to hear Reinken, the great organist, and to Zelle to listen to the French band in the service of the prince. With the change in his voice came the loss of his

place and the necessity of entering upon a new field. Like Handel, he had studied the violin—with success, as his remarkable compositions for that instrument prove—and it was now his resource. At the age of 18, therefore, he journeyed to Weimar, and entered the service of the court there as violinist. His leisure hours were still devoted to the organ, to counterpoint, and composition, and in less than 2 years, though hardly 20 years of age, he was called to Arnstadt to fill the place of organist, probably in the church where his father's uncle Heinrich had so long officiated. The 8 years spent in Arnstadt were years of most devoted study, and during that time he developed those powers which afterward placed him above all rivalry. Beside the labor which he devoted to the working out of his own conceptions, he let nothing escape him which appeared from the pens of Bruhns, Reinken, and Buxtehude. He was so charmed with the works of the last named that he went to Lützen to hear him play, and prolonged his visit to a stay of 3 months, merely to listen to him in the church, for his acquaintance he did not make. In 1707 he accepted a call to Mühlhausen, and the following year returned to Weimar in the capacity of court organist. Encouraged by the continued applause of the court he exerted himself to the utmost, and his principal compositions for the organ date during the 7 years of his service there. In 1714 he gave up his position as organist and accepted the place of concert-master to the duke, with the additional duty of composing and conducting the vocal music of the ducal chapel. Here, doubtless, began the enormous list of works in every form of sacred music, which, mostly in manuscript, are preserved in the musical libraries of Berlin, Leipzig, and other cities. Here, too, he had constant practice in writing orchestral works and instrumental chamber music, and fitted himself for a larger stage of action. In 1717 Marchand, then at the head of French organists, appeared in Dresden, and charmed Augustus so greatly by his skill as to receive an offer of a very large salary to enter his service. Volunier, also a Frenchman, the concert-master of the king—whether jealous for the honor of his own nation or that in which he had cast his lot cannot now be determined—invited Bach to the apital to a trial of skill with Marchand. The Saxon accepted the invitation, and through the kindness of Volunier had an opportunity of hearing his rival. With the knowledge and consent of Augustus, Bach sent his challenge to the French artist, which was accepted. At the time fixed, Bach appeared at the house of the minister where the contest was to take place. The king and company waited long, but Marchand came not. At length came news that he had left the city early that day by extra post. The greatness of the German organist, however, more than made good the loss. Bach returned to Weimar, but soon after accepted the office of Kapellmeister to the court at Köthen, where he remained, composing for and directing the or-

chestra, until 1738, when the city authorities of Leipzig elected him to the position of musical director and cantor of the Thomas school. During the 6 years at Köthen he had not neglected his favorite instrument. Obtaining leave of absence, he again visited Hamburg to see the aged Reinke, who had now nearly completed his century. While there, he gave a performance upon the organ of the Catharine church in presence of the city magistrates and the principal citizens, extemporizing for more than 2 hours in such a manner, that the aged Reinke, who had listened with delighted attention, exclaimed at the close, "I thought this art had completely died out; but I see it still lives in you." At the age of 88 then, Bach, rich in all that study of theory, hearing the best models of his age and country, practice as member and leader of orchestras, and constant exercise in composition for church and concert-room, could give him, entered upon the calm, quiet life of succeeding years, and devoted himself to teaching and to the working out of his lofty conceptions of the musical art. Twenty-seven years he thus lived and labored surrounded by his pupils and his large family of sons, composing music sacred and secular in all the forms then known, except the opera and dramatic oratorio, and leaving as the fruits of those years a mass of compositions, which for number, variety, and excellence, form perhaps the most astonishing monument of musical genius and learning. Mozart and Handel alone can at all come in competition with him in this regard. Of the few works from his pen, which appeared in his lifetime, most are said to have been engraved upon copper by himself with the assistance of his son Friedemann, and this labor, added to his others so numerous, finally cost him his sight. A few years later, at the age of 85, an attack of apoplexy carried him to the tomb. He was twice married, and of the fruits of those marriages he left 10 sons, all of them fine musicians; several of them among the very first of that great period in the history of the art of which Mozart, Haydn, and Gluck, were the chief ornaments. This great musician had no cause to complain of a want of due appreciation, either as organist or composer. Very soon after his establishment in Leipzig, the duke of Weissenfels conferred the title of Kapellmeister, with the emoluments of the office, without requiring his personal attendance at court, and, in 1736, Augustus of Saxony created him "Royal Polish and Saxon electoral court composer." In 1747 he was persuaded to accept an invitation from Frederic II., king of Prussia, to visit Berlin and Potsdam. Notice was given to the king of his arrival in the latter city, just as a private concert in the palace was to begin. "Gentlemen," said Frederic, "old Bach has come!" The old organist was instantly sent for, and without affording him time to change his dress, he was brought to the palace. The king had several of Silbermann's pianofortes in various apartments—one may still be seen

there—and to these in succession Bach was taken and called upon to try their powers. At length the king gave him a theme for a fugue, which was so coined out as to afford him the highest gratification, and he immediately afterward demanded an extemporaneous fugue in 6 parts. Bach thought a moment, and selecting the theme, worked it up to the astonishment not only of the king but of the several distinguished musicians present. Upon his return to Leipsic he wrote out the fugue, added to it another in 8 parts, and a *ricercar*, also, in 6, both upon the same theme, together with other specimens of his powers, and published them with the title of "A Musical Offering." The only works by Bach, published during his life, are exercises for the harpsichord, in 8 parts, which appeared at intervals; an air with 30 variations; 6 choral preludes in 8 parts for the organ; variations in canon upon the choral *Vom Himmel hoch*, and the "Musical Offering." The rest of his works left in manuscript have come out one by one, or still remain unpublished. The 6th volume, in folio, of his complete works, has just appeared at Leipsic, edited by the Bach society. Our limits forbid any attempt to give a catalogue of these works—they amount to many hundreds in number. Among them are found 5 complete sets of vocal pieces for the church for all the Sundays and festivals of the year; a great collection of oratorios, masses, magnificats, sanctus, pieces for birth, wedding, and funeral occasions, and not a few comic compositions; 5 "passions," so called, compositions to which the accounts of the suffering and death of Christ, as given by the evangelists, furnish the text; more than a hundred sacred cantatas are preserved in the library of the Thomas school alone. "The Well-tempered Clavier," a collection of 48 preludes and 48 fugues, is known to every earnest student of the pianoforte, as remarkable in its adaptation to the purpose of enabling the performer to conquer the difficulties of that instrument. His works for organ, harpsichord, orchestra, and every solo instrument in use a century since, are as numerous and effective as his vocal compositions, and begin again to form a part of the programmes in the principal concerts of central Europe. As a virtuoso upon keyed instruments, Bach seems to have anticipated the wonderful effects produced in our own days by Thalberg, and even Liszt. In his own age he was in this regard—as has been said of Shakespeare as a poet—so far above all others as to have no second. The fingering invented by Bach was the basis of his son Emanuel's work upon the pianoforte, which opened a new era for the instrument, and led, through Mozart and Clementi, the way to the extraordinary perfection exhibited by the virtuosos of our own time. To it he was compelled by his own works, for, as he himself said, "he had often been compelled to study long at night how to play the compositions which he had written during the day." Perhaps the

most striking points in Bach's compositions are the marvellous invention they exhibit, and their extraordinary grandeur, power, and science. Mozart, when, near the close of life, he came to Leipsic, after having exhausted all the sources of musical learning of Rome, Milan, Vienna, and Paris, heard the Thomas school boys sing a motet of Bach. His attention was caught; "Ah," he exclaimed, "here is that from which one may still learn something!" Bach's works occupy some such ground in art as do the works of our noble old English prose writers in literature; they require study to be comprehended and felt in their greatness. Here and there the forms of expression have become antiquated; at first much seems obscure, which afterward stands out prominent for beauty; but study is rewarded finally by leading him who perseveres to treasures of original thought there and there only to be found.—Of the 6th generation of the Bach family, some 30 in number, the more distinguished were the following: JOHANN ERNST, born at Eisenach, June 23, 1722, died 1781, was educated at the Thomas school, a university at Leipsic; made jurisprudence his profession, and settled as an advocate in his native city. But he was a Bach, and music early drew him from the law. At the age of 28 he was made assistant-organist to his father, and finally appointed kapellmeister by the duke at Weimar. Life at court proved disagreeable to him, and upon the death of the duke he returned to Eisenach and to his former position. He was an industrious and successful composer for the church, and while at Weimar produced a great number of orchestral works. Few of his compositions were printed.—WILHELM FRIEDERICH, eldest son of Johann Sebastian, born at Weimar in 1710, died July 1, 1784, at Berlin. Of all the Bachs born since Sebastian, this man seemed by nature the best fitted to succeed to the high position which his father held in the art. His genius was of the highest order, and the progress which he made in childhood under his father's instructions, gave rise to the brightest hopes for the future. In his early and extraordinary mastery both of the practice and theory of music, he seems to have more nearly rivalled Mozart, than any other. His compositions were remarkable for their power and depth, and by his command of the harpsichord and organ in reproducing instantly any musical idea which occurred to him, he aroused the wonder of all who heard him. He studied the violin with the celebrated Grams, afterward concert-master to Frederic II. of Prussia, with equal success. He passed through regular courses of instruction at the Thomas school, and then entered the university at Leipsic, where he devoted himself to jurisprudence and mathematics. To the latter science he specially inclined, and retained his fondness for it throughout life. Music, however, was not neglected, and in his 28d year he was called to Dresden as organist in the Sophia Church. He remained there until 1747, when he re-

moved to Halle as music-director and organist, where he remained about 20 years, and hence is often named in musical works "the Halle Bach." At the age of 57 he gave up his place, and departed to Leipzig, with nothing certain in view—but poverty. During the remaining 7 years of his life, without a fixed position, he was a sort of vagabond, teaching and practising music in Brunswick, Göttingen, and Berlin, living in a miserable condition at the age of 74. His man was recognized by all his contemporaries as the greatest musical genius then living—during the period between Handel and the great Bach, and that in which Mozart reached his development—the greatest organist, the deepest contrapuntist, the most learned musician of Germany. Unfortunately he was also a man of execrable temper, rude in his manners, almost brutal; possessed of a professional pride, which rendered him intolerable to other artists; absent-minded in the highest degree—and what was worse than all, a drunkard. During his long residence in Halle, he was a constant source of trouble at the church, of which he was organist. He often forgot to attend divine worship. When on his way thither, he would sometimes forget his errand and wonder why the bells were ringing; sometimes he would enter the church at one door, forget himself and pass out at the other. He often gave the organ-blower the keys of the instrument, but, in case of his forgetfulness, some one else might take his place. On one occasion, in his anxiety to do his duty, he went very early to the church, and while awaiting the congregation, placed himself in the women's seat, where he was soon lost as usual in a reverie, the organ key in his pocket. The congregation had assembled, and it was time for the voluntary; people became impatient, looked up at the organ loft, and shook their heads. Bach did the same, and finally exclaimed to some person near him, "Well, I wonder who is to play the organ to-day!" Sometimes he would forget himself, while at the instrument, and play on until the patience of priest and people was alike exhausted. In consequence of a severe reproof upon such an occasion, the now old man gathered up his worldly possessions and went off to Leipzig. On one of his journeys, at a later date, which he made on foot, with a bundle under his arm, he met a company of musical Prague students, and with them visited a chateau in the neighborhood of Brunswick. The servants told them they must do their best as there was a great musician in the house upon a visit. When Bach's turn came, he extemporized upon a grand pianoforte for a long time in his best manner. As he ended, a voice rang through the hall, "That is my brother Friedemann, or the devil!" The speaker was Emanuel Bach. The brothers then threw themselves into each other's arms, and Friedemann shed tears of joy, that Emanuel had recognized him from his playing. His bad temper, however, soon caused a rupture between them, and they were strangers

henceforth. The works of Friedemann Bach are few in number, but these few are such as to cause every musician to deplore the sad waste of genius and talent which his life exhibited.—CARL PHILIPP EMANUEL, born at Weimar, March 14, 1714, was the 8d son of Johann Sebastian. In his childhood he was thoroughly grounded in music, practical and theoretical, afterward following his brother Friedemann to the Thomas school and university in Leipzig. Like him, too, he studied jurisprudence there, and pursued the science further in Frankfurt on the Oder. In this city he founded and directed a musical society, which often sang compositions from his pen. At the age of 24, he removed to Berlin, where he lived privately until 1740, when he was appointed chamber musician and accompanist to Frederic II. in that monarch's flute solos. In 1767, he accepted a call to Hamburg as music director, where he died of consumption, Sept. 14, 1788. He was one of the most prolific composers of his time, and his works were popular to such a degree, that the list of those published during his life, surpasses in extent that of any German composer, until the appearance of Joseph Haydn. He was equally great in all departments of composition, except the lyric drama, in which he had no call to exert his powers. The choruses of his oratorio "Israel in the wilderness," and of some of his more extended works for the church, place him nearer Handel, perhaps, in their power, beauty, and ravishing vocal effects, than any other composer. As a writer of songs, odes, and psalms, he surpassed all his contemporaries, and some of his collections reached their 4th and 5th editions soon after their publication. As a symphonist and writer of chamber music, he held the first rank, both for their beauty and the extraordinary invention they exhibited. Like the works of Mozart and Beethoven, at a later period, his were censured as being full of strange modulations, crudities, and difficulties; but they made their way in spite of the critics, and became the foundation upon which Haydn erected his temple. While restrained within due limits by the example and instructions of his father, he nevertheless made music the medium of expression for the varying emotions of his naturally poetic spirit, and thoughts sublime, pathetic, and humorous, are often combined in a manner then utterly new and surprising. Haydn was a most diligent student of his works, and declared in his old age, when he stood in the musical world with no rival but Mozart, "For what I know, I have to thank Carl Philipp Emanuel Bach." Clementi has the reputation of being the father of modern pianoforte playing. That great man, however, acknowledged in Bach his master. He became what he was through his study of Emanuel's works, and to him we owe the publication of many of them. The works of Bach for this instrument, trios, sonatas, with accompaniment, concertos with orchestra, and sonatas, are numbered by hundreds, of which

he said, "In my opinion, the grand object of music is to touch the heart, and this end can never be attained by the pianist by mere noise, drumming, and arpeggios, at all events not by me." His great work, the foundation of all the valuable ones which since have appeared, upon the pianoforte, was the *Versuch über die wahre Art das Klavier zu spielen* (Essay on the Art of playing the Harpsichord), of which the first part appeared at Berlin in 1759, and reached its third and improved edition before his death, and the second part, treating of accompaniment and the free fantasia, in 1762. The basis of this work, as may naturally be supposed, was found in the instructions and example of his father. It interprets and renders available the science of Sebastian Bach. The profound philosophy of the great thinker of one age becomes in another the common sense of the public, and the thinker is forgotten soon by the scholar. It is so in art. The musician of our own day very rarely knows how much he is indebted to the "Hamburg Bach."—JOHANN CHRISTOPH FRIEDRICH, known as the "Bückeburg Bach," 10th son of Johann Sebastian, born at Leipsic in 1782, studied jurisprudence like his brothers above named, and like them also, afterward devoted himself to music. He received the appointment of Kapellmeister at an early age, from the duke of Lippe Schaumburg, and passed his life in his service at Bückeburg, dying Jan. 26, 1795, of a lung fever. His compositions were very numerous, especially for the church, no festival being allowed to pass without a new work from his pen. Although neither as a pianist nor as a composer reaching the rank of his two elder brothers, he was worthy of his name, and beside his salary received valuable presents and testimonials from the princely family in whose service he passed his life. His published works consisted principally of songs and chamber music, of which six violin quartettes originally appeared in London.—JOHANN CHRISTIAN, known as the Milan or the London Bach, the 11th son of Johann Sebastian, was born in Leipsic in 1735, died in Jan. 1782. He enjoyed his father's instructions until his 16th year, when upon his death he left Leipsic for Berlin, to prosecute his musical studies with his brother Emanuel. He bade fair to rival his elder brothers in that style of music which seems to have been in some degree peculiar to the family, and had already produced several smaller compositions successfully, when he was induced, at the age of 19, by some of the Italian vocalists of Berlin, to visit Italy. During a short stay in Milan, he attracted so much attention by his profound abilities, as to be elected one of the organists in the cathedral. He, however, devoted himself almost exclusively to composition for the voice, and in 1759, upon his appearance in London, had lost much of his previous skill as a virtuoso upon keyed instruments. His style was so much admired, however, that he endeavored to recover his former great skill, but was never

able to fully make up the losses his hands sustained through disuse. In 1763, he was invited to compose an opera for the London stage, and produced *Orione*, which had a most successful run of three months. This was followed by a series of works, some entirely of his composition, others partially so. Many of his airs are admirable, and at the time were exceedingly popular, being always natural, elegant, and in the then best Italian style. He was particularly noted for the richness, variety, and beauty of his accompaniments, which showed the influence of his father and elder brothers upon him, and the profoundness of his theoretical studies. His pianoforte music, however, was in a light and pleasing style, very different from that of any other of his name. Emanuel once reproved him for it, in a letter to which, in his reply, he answered, "I am obliged to use baby talk, that children may understand me." On one occasion, a friend chid him for the course he pursued, and spoke of his brother Emanuel as one who was doing honor to his father. "Ah," said Christian, "my brother lives to compose, I compose to live." Schubert says of his works: "His church music has great depth, but there is a certain worldly air to it, and one finds therein a sort of taint of corruption. All the operas written by him for Italy, Germany, and England, show a master-spirit in the realm of music. This Bach had it in his power to be whatever he would, and he may well be compared to the Proteus of fable. Now he sports water, now he breathes forth flame. In the midst of the trivialities of fashionable style, the giant spirit of his father may be discovered." Burney has devoted much space to his history, and to him we must refer our readers for further information. His wife, Cecilia Giusti, was long prima donna in the London opera.

BAOH, ALEXANDER, an Austrian statesman, born Jan. 4, 1813, in Loosdorf, Lower Austria, entered at the age of 15 the office of his father, then a lawyer at Vienna. Having travelled extensively in Europe and the East, he succeeded to his father's practice, and acquired local distinction as a man of liberal tendencies and a political reformer. In 1848, he appeared in the imperial diet as the advocate of the centralization of the Austrian monarchy, while he opposed the connection of the German provinces of the empire with the German confederation. When the Döblichoff ministry resigned, after the events of May 15, 1848, Bach came into office as minister of justice, and was chosen by one of the districts of Vienna as a member of the constituent assembly. In that body he opposed the democrats with great energy; and especially insisted on indemnity to the landholders in the emancipation of the peasantry from feudal burdens. When the insurrection of Oct. 6, 1848, occurred, Bach escaped to Salzburg, and afterward went to Olmütz, where he became a member of the new ministry. In the dissolution of the diet at Kremsier, the Hungarian war, and the subsequent reorganization of

he empire, he participated in all the action of the government. When Count Stadion was compelled to withdraw, Bach became minister of the interior, July 28, 1849, which office he still holds.

BACHAN, or, according to Dutch orthography, *BATJAN*, is the largest of the 5 original Moluccas, the parent country of the clove; area 400 sq. m., and pop. in 1841, 1,100, or less than $\frac{1}{4}$ to a square mile. Its eastern extremity is in lat. $0^{\circ} 48' S.$, long. $127^{\circ} 54' E.$ It is altogether of volcanic formation. Since the extirpation of the clove tree in the Moluccas by the Dutch, in order to confine the culture within the Banda group, this island has ceased to be of any consequence. It had once a considerable population, supposed to have been not less than 20,000, when its king entertained the followers of Magellan, and sent presents of birds of paradise to the king of Spain. Quite recently fossil coal of excellent quality has been found in the island, in considerable quantities, which will be likely to give it greater importance than it ever possessed in its almy days of spice culture and export. Fuller particulars will more properly come under the head of *MOLUCCA*.

BACHARACH, a fortified town of Rhenish Prussia, on the Rhine. Wines of superior quality are produced in its vicinity. At this place Luther crossed the Rhine on Jan. 1, 1814. Pop. 1,901.

BACHAUMONT, FRANÇOIS LE COIGNEUX DE, French wit and literary man, born at Paris in 624, died in 1702. He was a judge in the parliament when the disturbances of *La Fronde* commenced. He sided, of course, with the opponents of Mazarin, and is said to have, by a joke, suggested the name given to his own party. He playfully remarked that their manoeuvres were much like those of boys, who sed, in spite of the police prohibition, to sling stones on the ramparts of Paris; and the comparison seemed so happy that all the anti-Mazarinists were pleased to be called *frondeurs* (slingers). Bachaumont, moreover, being an easy writer of verse, composed many epigrams and satirical songs against the cardinal, some of which were very popular. On the restoration of tranquillity he sold out his office, and henceforth spent his life convivially with Ohalles, a great friend of Molière. With this most agreeable companion he undertook a journey to Rome; an account of which they wrote in verse mixed with rhymes. This Voltaire once declared to be a model of wit, though now it is simply a literary curiosity. When growing old, Bachaumont married a niece of Madame de Lambert, the moralist, saying, as an excuse to his astonished friends, "An honest man ought to live without the church's threshold, and die within the vestry."

BACHE, ALEXANDER DALLAS, an American philosopher, born in Philadelphia, July 19, 1806, being a great-grandson of Dr. Benjamin Franklin. He was educated at the U. S. military academy at West Point, and having graduated

with the highest honors, became lieutenant of topographical engineers, in 1825. During the whole term of four years at West Point, he never received a single mark of demerit. In 1827 he was elected professor of mathematics in the university of Pennsylvania, where he remained until he was appointed president of Girard college, and went to Europe to inspect the seats of learning there. Soon after his return to Philadelphia, Girard college not having then been opened, he resigned the presidency of that institution, and was appointed the first principal of the high school in Philadelphia. This situation he left in 1848, on being appointed to his present office, as superintendent of the U. S. coast survey—a work so well begun by Mr. Hassler, but which has never been generously supported by congress. Under the energetic and wise direction of Prof. Bache, it has been fruitful not only in practical benefit to navigators, but in valuable contributions to geodetic and physical science. These contributions may be found in the annual reports of the survey, and in a more detailed form in the proceedings of the American association for the advancement of science.

BACHE, BENJAMIN FRANKLIN, an American journalist, a grandson of Dr. Franklin, died in 1799. He accompanied Dr. Franklin to Paris, and completed his education as a printer in the celebrated publishing house of the brothers Didot. Returning in 1785, he studied for a time in the college of Philadelphia, and, in 1790, began the publication of the "General Advertiser," afterward called the "Aurora." This was the ablest and most influential opposition journal during the first two administrations.

BACHE, RICHARD, a merchant of Philadelphia, born in England in 1737, died in Berks co., Pennsylvania, July 29, 1811. He came to America in early life, and married, in 1767, the only daughter of Dr. Franklin. At the beginning of the revolution, he was president of the republican society of Philadelphia, and from 1776 to 1782, was postmaster-general of the United States.

BACHE, SARAH, the only daughter of Benjamin Franklin, and the wife of Richard Bache, was born in Philadelphia in Sept. 1744, died in 1808. She was one of the heroines of the American revolution, and is worthy to be remembered for her intelligence, her virtues, and her services. In the year 1780, when many soldiers of the American army were going barefoot and half-clad, an effort was made by the American women to furnish clothing to them. The marchioness de Lafayette contributed 100 guineas, the countess de Luzerne \$6,000, and Robert Morris and other wealthy patriots contributed considerable amounts. The money was expended for materials, which, by the continued labors of many women, were soon made into the needed garments. In this work Mrs. Bache was prominently engaged, assisting by her judgment all its plans and proceedings, and active also in

the use of the needle. More than 2,300 women were thus employed by her at one time, in sewing for the army. The marquis de Chastellux, then visiting in Philadelphia, was charmed with the appearance of Mrs. Bache, and recommended her to the ladies of Europe as a model of domestic virtues and feminine patriotism. On many occasions she displayed her active benevolence and her love of country, by performing hospital duties, tending the sick soldiers, dressing the wounds of the wounded, and administering medicines and cordials.

BACHELOR, the usual term for an unmarried man. In antiquity it was considered unpatriotic in a citizen to remain a bachelor all his days. By the Spartan laws, those citizens who remained bachelors after middle age were excluded from all offices, civil and military. At certain feasts they were exposed to public derision, and led round the market-place. Although, generally speaking, age was deeply respected at Sparta, yet this feeling was not manifested toward old bachelors. "Why should I make way for you?" said a Spartan youth to a gray-headed Spartan bachelor, "who will never have a son to do me the same honor when I am old?" The Roman law pursued the same policy toward bachelors. They had to pay extra and special taxes, and under Augustus, the *Lex Julia de maritandis Ordinibus* was enacted, by which bachelors were made incapable of acquiring legacies and devises of real estate by will, except from their near relations. In the canon law bachelors are enjoined to marry, or else to profess chastity in earnest by becoming monks. In modern times this policy has been abandoned.

BACHELU, GILBERT DESIRÉ JOSEPH, baron, a French general, born in Dole (Jura), Feb. 9, 1777, died in Paris in June, 1849. He took an active part in the Rhenish and Egyptian campaigns under Moreau and Kleber. He accompanied Leclerc on his expedition to St. Domingo. In the battle of Austerlitz he commanded the 11th regiment. He gained a brilliant victory with a handful of men near Castel-nuovo, May 30, 1807, over 2 Russian battalions and 5,000 Montenegrins. He was promoted to the rank of brigadier-general, and afterward fought at Wagram, in Russia, under Macdonald, and at the siege of Dantzic. In 1814, on his return to Paris, he was recognized by Louis XVIII. as one of the lieutenant-generals of the French army. But in 1815, he again took service under Napoleon, and after the battle of Waterloo he was for some time placed under arrest, and doomed to exile, until 1817, when he was recalled. In 1837 he was sent as deputy to the chamber, by the electoral committee of his native town, Dole. In the legislature he acted with the opposition.

BACHMAN, JOHN, D. D., LL. D., an American naturalist and theologian, pastor of the German Lutheran church in Charleston, S. C., born in Dutchess co., N. Y., Feb. 4, 1790. He was an associate of Audubon, whom he assisted

in the preparation of his great work on ornithology, and was the principal author of the work on the quadrupeds of N. America, illustrated by Audubon and his sons. He has also discussed the bearings of modern science upon revealed religion, and his communications upon this subject to the "Medical Journal" of South Carolina have extended his reputation both for learning and for piety. He has also written an able controversial work in defence of the morals and character of Martin Luther. He is a careful though fluent writer, an earnest pastor, and is esteemed among the first naturalists of the country.

BACHMANN, ANDERLETZ NIKOLAS FRAZ, baron von, a Swiss general, born in Glarus, in 1740, died in his native village, 1831. He entered the French service at 9 years of age, fought as captain in the 7 years' war, and became commander of a regiment in 1788. After the dethronement of Louis XVI., he fled into Switzerland, and took service under the king of Sardinia, as major-general. When Piedmont and Savoy were conquered by the French, he fled to England, and commanded a regiment of the British foreign legion; he returned to Switzerland again, in the enjoyment of a British pension, and fought against the French in the battles of Zurich, Feldkirch, and Zug. After the French success in Switzerland, he lived for a time in Swabia. In 1814 he became general of the Swiss in the service of the Bourbons, and after the return of Napoleon from Elba, general-in-chief of the Swiss army—but after the peace of 1815 he retired from that profession in which he had served for more than 60 years, to his paternal estates, where he died.—KARL FREDERICK, professor of philosophy at Jena, born at Altesburg, 1785, died at Jena, Sept. 20, 1855. His writings are numerous, but he is most famous for his *Anti-Hegel*, issued in 1835.

BACHOFEN, a market-town of Bohemia on the Iser. It was plundered by the Swedes in the 30 years' war.

BAOCHTELEN, a small hamlet of Bern, Switzerland, remarkable for its reform school for vicious children and those convicted of petty misdemeanors. This school was established in May, 1840, and is modelled after the celebrated *Rauhe Haus*, at Hamburg. The children are admitted singly and at intervals considerably remote; they are put on probation for 2 or 3 months, and then placed in one of the families, of which there are 3 or 4, each consisting of 13 children, under the special direction of a thoroughly trained teacher; those educated under Vehrli being preferred. Children are admitted from 6 to 15 years of age, and they must stay at least 4 years. Four teachers, including the director, a farmer, a stableman, and a house-keeper, are the hired employes. Farming and gardening, with some of the simpler mechanic arts, constitute the employment of the children. The instruction is similar to that of the primary schools of the canton. The intimate, thorough, and constant relations of each child with the

director and teachers, exert an influence so salutary upon the children as to make their reformation a comparatively easy work. The graduates have uniformly done well. The expense of each pupil is about \$49 50.

BAQUINET, or BASNET (Fr. *bassinet*), originally, the skull-cap of a low circular shape, called also *cerveillièra*, from the protection which it afforded to the brain, which was the basis of the complete knightly helmet of the improved form, used in the 14th century. It consists of a plain asin-like cap, as its name indicates, covering the head from the brows to the nape of the neck. To this were attached: 1, the camail, or mail hood, covering the neck downward from the lower rim behind—afterward replaced by jointed plates of steel, connected with the gorget and protecting the whole neck and throat to the shoulders; 2, the avantaille, which, when raised, left the eyes and face down to the nostrils uncovered, and the beaver, which, when lowered, disclosed the mouth; these 2 pieces when closed meeting each other and forming the visor, which guarded the whole countenance of the wearer; and lastly, the buronet or crest, to which was often attached a pennon of plumage, or a lady's favor. Afterward, the baquinet was often worn alone without visor, crest, or ornament, except the mail hood, for half armor, as is seen on the monument of the Black prince, represented in the illustrated edition of Froissart; and, yet later, the simple skull-cap with a peak before and behind and cheek-pieces, leaving the whole face exposed, as worn by the archers and pikemen of Elizabeth's time, and by Cromwell's ironides, bore this name.

BACK, ABRAHAM, a distinguished physician and naturalist, born at Söderhamn, Sweden, 1 October, 1718, died at Stockholm, March 15, 1795. He first commenced the study of theology, but soon devoted himself to medicine. He graduated at Upsal in 1740, and immediately went to France and Germany, in which countries he pursued his studies until 1745. He took a great share in the work of providing Stockholm with hospitals, and his life and labors exercised a powerful influence upon the progress of medical science in Sweden. Linnæus, out of respect for his botanical abilities, gave his name to the species *Bäckea*.

BACK, SIR GEORGE, F. R. S., an Arctic navigator, born at Stockport, in Cheshire, England, Nov. 6, 1796. He entered the royal navy in 1808, his first commission being as midshipman on board the *Arethusa*, Capt. Robert Bland. He was present at the capture of a French privateer off Cherbourg in 1809, and during the same year was employed in the destruction of the batteries of Leyquito, and the seizure of several vessels in the river Andero. His next experience of naval warfare was at Agio, on which occasion he was made prisoner, and sent to France. At the end of 5 years he regained his liberty, served under Sir Thomas Maitland, on board the *Akbar*, at Flushing,

passed his examination in 1817, was removed successively to the *Bulwark*, Sir Charles Rowley, and the *Trent*, lieutenant-commander John Franklin, and accompanied Capt. David Buchan on an expedition to the neighborhood of Spitzbergen. In 1819 he was one of the 2 midshipmen appointed to attend Sir John Franklin on his overland expedition from the western shore of Hudson's bay to the northern coast of America, near the Coppermine river. In this difficult and adventurous journey, Mr. Back displayed a perseverance and an energy which won for him the highest encomiums. The party reached Fort Enterprise in July, 1820, and determined to winter there, while Mr. Back returned to Fort Chipewyan (a distance of 500 miles), to obtain fresh supplies. He acquitted himself of this duty after undergoing the most terrible hardships from cold and hunger, and rejoined his party in March, 1821. About this time he was promoted to the rank of lieutenant. The expedition returned to York Factory in 1823, and 2 years after Mr. Back joined Franklin's second expedition, designed to co-operate with Beechey and Parry, in their efforts to discover from opposite quarters the north-west passage. Lieut. Back penetrated as far as lat. 70° 24' N., long. 149° 87' W., and on Capt. Franklin's setting out from Great Bear lake, on the return of the expedition, he was left in charge of the remaining officers and men, at Fort Franklin, with all the stores, journals of the voyage, &c. On the breaking up of the ice, he started for York Factory, and thence set sail for England, where he arrived in 1827. During his absence, in 1825, he had been promoted to the rank of commander, and in 1833, undismayed by the remembrance of his past sufferings in the Polar seas, he took charge of the party sent out in search of Sir John Ross, who had left England in 1829. Capt. Back published an interesting history of this voyage, during which his hardships and perils were no less appalling than on the previous expeditions. Receiving intelligence of Ross's safety, he returned home in 1835, obtained his post rank, and in June, 1836, we find him in command of the *Terror*, about starting on a fresh Arctic voyage, of which we have a full account in his "Narrative of an expedition in H. M. ship *Terror*, undertaken with a view to geographical discovery on the Arctic shores in 1836-7." Though ably commanded and supplied with an excellent outfit, the expedition accomplished nothing. It was the last undertaken by Capt. Back, who has since been permitted to retire upon half-pay. In token of appreciation of his services the geographical society awarded him a gold medal in 1837; 2 years afterward he was knighted, and he now holds a lucrative treasury appointment. In 1846 he was married to Mrs. Theodosia Elizabeth Hammond.

BACK'S LAND, the region in British N. America, around the Arctic circle, between long. 95° and 108° W., explored by Back in 1833.

BACKERELL, GUZZE, a Dutch painter, lived

in the latter half of the 17th century. He was a contemporary of Rubens, whose style he imitated. Pilkington says the works of Backerell are equal to those of Vandyck and Rubens. The Carlo Borromeo of the cathedral of Bruges is his *chef-d'œuvre*.

BACKERGUNGE, a district of Hindoestan, at the mouths of the Ganges and Bramapootra, area 4,564 sq. m. It is subject to great inundations, one of which, in 1822, destroyed the lives of 10,000 persons, and a large amount of property. It produces 2 crops of rice annually. Large portions of the country are covered with jungle, and infested with ferocious beasts. The descendants of some Portuguese, who came to the coast in 1666, still exist there in a deplorable state of degradation. In 1801, the population was 926,728, of which $\frac{1}{4}$ were Hindoos. The waters of this district were formerly infested by the Dacoits, a savage, piratical horde, who, however, are now under governmental restraint. The chief town of this district, also named Backergunge, has a large commerce in salt, rice, and cotton fabrics.

BACKGAMMON, a game, in which chance and calculation are curiously mingled. It is believed to be of English origin, though it has long been played throughout continental Europe. Played with men and dice, upon a peculiar table, it has variously been called backgammon and tables. It is commonly known by the former appellation, but Chaucer, Shakespeare, and Bacon, severally mention it as playing at tables. Dice, which constitute part of its machinery, are of extreme antiquity, for it is recorded that Mercury once had a cast of the dice with the goddess Juno. The name backgammon, is supposed by Bishop Kennett, and Joseph Strutt ("Sports and Pastimes"), to be derived from two Anglo-Saxon words, *bac*, back, and *gammon*, a game, which may be taken as a game where the players are liable to be sent back. Dr. Henry traces it back to the Welsh; *bach*, little, and *cammon*, battle. The former derivation is certainly the best, for it precisely expresses the main principle of a game in which the player is exposed to the chance of being sent back to his adversary's table. Backgammon is played by two persons, each with a small circular box, from which two dice are cast. Thirty men, half black and the other half white, like those in the game of draughts, are used. They are arranged upon a double table, divided into 4 compartments, each having noted on it, in alternate colors, 6 of the 24 points on which the men may move. The men are arranged thus: 2 in your adversary's inner, 5 in his outer table; 8 in your own outer, and 5 in your own inner table. Your opponent's men are arranged precisely similarly. The motive of the game is to bring all your men, wheresoever placed, into your own inner table, and then bearing, or moving them off the board. Whoever thus first disposes of his men, wins the game. The impediments are the liability to be hit, or taken up, if a man be left by him-

self uncovered by another, and the chance of being locked up in your adversary's inner table, while he is bearing off his men; so that, at last, making a rapid retreat, you bear off one or more men before the adversary has borne off all of his. When you do this, you lose the game, and the adversary wins a hit; when he has all his men borne off before you have been able to bear one, you lose a gammon; when he has borne off all his men, and you still retain one man or more in his inner table, without your having borne at all, it is a backgammon. A hit counts 1, a gammon 2, and a backgammon 4. In commencing to play, both parties "throw for first move," and whoever has the highest throw plays first. After that, the first play regularly alternates, except when a gammon or backgammon is won, when both parties throw anew for first move. The leading principle of the game is to bring your own men home (i. e. into your inner table), and prevent your opponent from performing the same feat. What is called "a run-away game," is often played without a man being taken up on either side, but this is considered as poor play. When a man is taken up he must remain up until he can be entered or placed on some blank space, or a space only occupied by a single man, on the opponent's inner table. If this solitary man belong to the adversary, he is taken up, for "the blot has been hit," and he, in turn, has to go back to his opponent's inner table. If the solitary man be your own, your entering on the point it occupies, is called covering the man. There are two descriptions of games on backgammon, the forward and the back game; and the main art or science in playing is to know when to play the dashing, forward game, and when to permit yourself to be returned back to the adversary's inner table, with the design of eventually so much embarrassing him, as to make him lose the game. It is an erroneous opinion that "luck is every thing in backgammon!" On the contrary, a careful player who understands the game, and will not throw any point away by oversight or haste, is as likely to conquer by his science or skill, as his less thoughtful adversary can by mere good luck in throwing. The rules of the game are few and simple: 1. Touch man and go—that is, play any man you lay your finger upon. 2. If you bear off a man, or any number of men, without observing that there is yet a man of yours to be brought into your own table, every man so borne off, must be entered again in your adversary's inner table. 3. If less than the full number of men are accidentally played with, there is no penalty, nor need the game stop, as this is a disadvantage against the person so playing. 4. A mistake in playing, discovered after the other party has thrown the dice, is not necessarily rectified, unless both players agree.

BAOKHUYSEN, LUDOLF, one of the most distinguished painters of the Flemish school, born at Emden, in Hanover, in 1691, died at

Amsterdam, in 1709. Employed first in business by his father, and subsequently by a merchant of Amsterdam, his fondness for shipping led him frequently to the port of the city, where he made admirable drawings, which at once gave him a reputation as an artist. He used to hire fishermen to take him out to sea during storms, and on landing he transferred immediately to the canvas his impressions of the scenes he had just witnessed. This gave to his sea pictures a great freshness and reality. The czar Peter, during his stay at Zaardam, frequently came up to Amsterdam to Backhuysen's studio, and often endeavored to make drawings after vessels which the artist had designed. His most celebrated work of art, representing a large sea picture with a multitude of vessels, and a view of Amsterdam in the distance, is in the Louvre. It was presented, in 1665, to Louis XIV. by the authorities of Amsterdam, at whose request the picture was executed by Backhuysen, who received for this work more glory than pay, the remuneration afforded to him being about \$600.—He must not be confounded with another artist of the same name, born 1717, died, in Rotterdam, 1782, who was a painter of battle pieces.

BACKUS, AZEL, an American clergyman, and the first president of Hamilton college, in the state of New York, born at Norwich, Connecticut, Oct. 13, 1765, died Dec. 9, 1817. His parents were of the Congregational church, and some of his near relations were clergymen, yet he early inclined to deistical opinions. He graduated at Yale college in 1787, with a high reputation for scholarship, and under the subsequent care and tuition of his uncle, the Rev. Charles Backus, became converted to Christianity, and had thoughts of engaging in the Christian ministry. In doubt as to his duty, he resolved to enter the army, but a visit from his uncle on the day preceding his intended departure, changed his purpose, and he began the study of theology. In 1791, he succeeded Dr. Bellamy as minister at Bethlehem; in 1798, preached the annual election sermon before the legislature of Connecticut, and upon the establishment of Hamilton college, in 1812, was elected its president, and inaugurated in his new office, Dec. 8. The college prospered under his supervision, but his useful career was terminated by his sudden death, 5 years after his election. He left several published sermons.

BACKUS, ISAAC, an American Baptist clergyman, born at Norwich, Conn., in 1724, died Nov. 20, 1806. He left the Congregational for the Baptist church, and to his exertions the Baptist denomination in America is largely indebted for its prosperity. He was an earnest advocate of religious freedom and of the equal rights of Christians, and was sent, in 1774, as an agent to claim from congress, then in session in Philadelphia, the same liberties for the Baptist that were accorded to other churches. In his writings upon the constitution of the church, he advocated the entire separation of the church

from the state. He was one of the most voluminous of American Baptist writers, and left a valuable history of that denomination.

BACLER D'ALBE, LOUIS ALBERT GHISLAIN, a French painter and soldier, born Oct. 21, 1762, at St. Pol, died at Sevres, Sept. 12, 1824. In order to study scenery, he took up his habitation at Sallenches, at the foot of Mont Blanc, and lived there 7 years. He afterward became a soldier under Bonaparte, and distinguished himself at Arcole, of which battle he made a picture. He also made drawings of the movements and plans of the Italian campaigns. When the French were driven out of Italy by Suwaroff, Bacler lost many of his drawings, but the Austrian government returned them to him. Bonaparte took Bacler about with him in all his campaigns. He was made general of brigade in 1813. At this time of his life he sketched every day the movement of the troops projected for the morrow. He was excluded from public employment on the return of the Bourbons.

BACOLOR, the chief town of the province of Pampanga, in the island of Luzon. It is situated in a plain, and is connected with the river Pampanga by means of a canal; pop. 8,548. During the brief occupation of Manila by the British in 1762, it was the capital of the Philippines.

BACON, ANN, born about 1528, died in 1600, one of the 4 learned daughters of Sir Anthony Cooke, who was the tutor of King Edward VI., wife of Sir Nicholas Bacon, and mother of Francis. Her father, acting upon a favorite opinion, then becoming prevalent, that the female mind was as susceptible of cultivation as the male, every evening instructed his daughters in all the lessons which, during the day, he had imparted to the king. He was rewarded for his pains; for he lived to see his daughters not only happily married, but distinguished for their virtues and accomplishments. Lady Anne became renowned as an excellent scholar, the translator from the Italian of 14 sermons of Ochinus, a learned divine, and, from the Latin, of Bishop Jewell's *Apologia*.

BACON, ANTHONY, an elder brother of the more celebrated Francis Bacon, was born in 1558, and studied at Cambridge, where he was matriculated in 1578. He went to Paris in 1579, where he formed an acquaintance with Henry IV., and entered into correspondence with the most eminent literary men of the day. The first edition of the famous "Essays" by his brother, was dedicated to him in 1597. The time of his death is unknown.

BACON, FRANCIS, Viscount St. Albans and Baron Verulam, whom Pope pronounces the "wisest" and "brightest" of mankind, adding another epithet not so honorable, was born at York house, in the Strand, London, Jan. 22, 1561, died at Highgate, April 9, 1626. He was the youngest son of Sir Nicholas Bacon, an eminent lawyer and statesman. Early in life he gave signs of great readiness and fertility of

talent, and of great sensibility also, for his health was exceeding delicate, so that he was often affected to fainting by slight atmospheric changes. This constitutional infirmity accompanied him even to his latest days. Nothing is known of the process of his education, except that, as both his parents were learned persons, and as their associations lay in the highest walks of life, he must have been early accustomed to study and observation. Cradled in politics, inasmuch as his father was the lord keeper and his uncle Lord Burleigh, a story is told of him which shows that he did not miss the lessons of the courtly society by which he was surrounded. When Queen Elizabeth asked him, yet a child, how old he was, he replied, "Two years younger than your majesty's happy reign." It is told of him, as a boy, also, that while his young companions were diverting themselves near his father's house in St. James's park, he stole away to the brick conduit to discover the cause of a singular echo there; and in his 12th year he speculated on the laws of the imagination. A year after he was sent to Trinity college, Cambridge, where he was matriculated at the same time with his brother Anthony, June 10, 1578. As a student he was diligent and laborious, but thought for himself, and before he was 16 had already conceived a dislike for the philosophy of Aristotle, still greatly in vogue at the university. "They learn nothing at the universities," he afterward said, in the "Praise of Knowledge," "but to believe. They are like a becalmed ship, they never move but by the wind of other men's breath, and have no oars of their own to steer withal." In the *Novum Organum* (ax. 90, l. 1) he repeats what he said when he was a boy. "The studies of men in such places are confined and pinned down to certain authors, from which if a man happen to differ, he is presently represented as a disturber and innovator." Some years after he quitted Cambridge he published a tract on the defects of universities, in which, after having premised that, as colleges were established for the communication of the knowledge of our predecessors, he proposed that a college be appropriated to the discovery of new truth, "to mix, like a living spring, with the stagnant waters." These sentiments he adhered to all his life, for in his will he endowed two lectures, in either of the universities, "by a lecturer, whether stranger or English, provided he is not professed in divinity, law, or physic." At the close of his collegiate course his father sent him to Paris, under the care of Sir Amyas Paulet, the English ambassador at that court, by whom he was shortly after entrusted with a mission to the queen, which he executed with ability and discretion. He then travelled in the French provinces, spending some time at Poitiers, where he prepared a work upon ciphers, and also one upon the state of Europe, but his father dying (1579) while he was engaged upon them, he instantly returned to England. As he was not left in a position to justify the devo-

tion of his life to contemplative studies, he applied for an office, which he failed to get, when he entered as a student of law in Gray's Inn (1580). It was not difficult for a mind of the calibre of his to master the general principles of law, while he connected with his professional studies an ardent pursuit of philosophy. On June 27, 1582, he was called to the bar; in 1586 he was made a bencher, and in 1589, when he was but 28, counsel extraordinary to the queen—"a grace," says his biographer Rawley, "scarce known before." He was thus introduced into the vortex of public life. At that time the court was divided into two parties, of which one was headed by the two Cecils, and the other by the earl of Leicester, and afterward by his son-in-law, the earl of Essex. Bacon was allied to the Cecils, being a nephew of Lord Burleigh and first cousin to Sir Robert Cecil, the principal secretary of state; and yet his affections lay with Essex. His advancement, however, did not correspond either with his abilities or his connections. The Cecils represented him as rather a speculative man, and therefore not fitted to carry forward the business of what Dickens has humorously satirized as the "circumlocution office." After renewed solicitations, they procured for him the reversion of the registrar of the star chamber, with some £1,600 a year, but he did not come into possession of it for 20 years. In 1592 he was returned to parliament as a knight of Middlesex. His first speech there was delivered in favor of his plan for the improvement of the law; another speech related to the postponement of certain subsidies which created popular discontent, whereby he provoked the anger of the queen; and being remonstrated with, he replied that he "spoke in discharge of his conscience and duty to God, to the queen, and to his country"—a noble reply, which he did not himself always in after life remember. Ben Jonson compliments his parliamentary eloquence highly, alleging that "no man ever spake more neatly, more pressly, more weightily, or suffered less emptiness, less idleness in what he uttered: no member of his speech but consisted of its own graces. His hearers could not cough or look aside from him without loss; he commanded when he spoke, and had his judges angry or pleased at his devotion. The fear of every man that heard him was lest he should make an end." In the spring of 1594, the solicitorship became vacant, by the promotion of Sir Edward Coke to the office of attorney-general, and Bacon applied for it, strenuously backed by Essex; but he did not succeed, the superior influence of the Cecils being against him. Essex, however, as some compensation for his disappointment, made him a present of Twickenham court, worth about £1,800, and so beautiful that Bacon called it the Garden of Paradise. It is worthy of remark that Elizabeth rejected the official claims of Bacon on the ground that although he was a man of wit and learning, he was yet "not very deep." During this

year Bacon published his first political tract, entitled "A Declaration of the Causes of the Great Troubles," a vindication of the course of England in respect to continental policy. Three years later (1597) he issued a small 12mo called "Essays, Religious Meditations, and a Table of the Colors of Good and Evil." It contained but 10 essays in all, of which he says that he hoped they will be "like the late new halfpence, which, though the pieces were small, the silver was good." Abounding in condensed and practical thought, expressed with much simplicity, and without much imagery, they yet evinced a mind of wonderful sagacity and comprehensive reach. They were translated almost immediately into French, Italian, and Latin, and have proved, as subsequently augmented both in number and length, the most popular of his writings. Dugald Stewart has properly remarked of the book that "it may be read from beginning to end in a few hours, and yet, after the twentieth reading, one seldom fails to remark in it something overlooked before." Dr. Whately has recently published (1857) a new edition, with an excellent introduction and many valuable notes. By Bacon's contemporaries it was gratefully received, "as the little cloud seen by the prophet," says Basil Montagu, "and welcomed as the harbinger of showers that would fertilize the whole country." Bacon's pecuniary affairs at this time were in a wretched state; in order to retrieve them he twice tried to form lucrative matrimonial connections; but these plans also miscarried, and he was twice arrested for debt. Early in the year 1599, a large body of the Irish, denied the protection of the laws, and hunted like wild beasts by an insolent soldiery, fled the neighborhood of cities, sheltered themselves in their marshes and forests, and grew every day more intractable and dangerous. It became necessary to subdue them, and Essex was appointed the lord lieutenant of Ireland; but his conduct in his office was so rash and haughty that Bacon, after vainly remonstrating with him, was at length compelled to turn against him. By this means he lost the aid of that powerful noble, without making either very many or very sincere friends on the other side. His conduct in respect to Essex, who was tried and condemned for his offences, in the year 1600, exposed Bacon to the charge of ingratitude and double-faced friendship; and though Mr. Basil Montagu, in his *Life of Bacon*, labored hard, and to some degree justly, to acquit him of the obloquy with which he was then visited, he has scarcely escaped all blame in the judgment of posterity. Bacon not only appears in the court against the man who had been his benefactor and friend, but he used all his skill as a lawyer to heighten the guilt of his crime, and that in pursuit of the good will of a queen, who had slighted him in his youth, depreciated his talents in maturer age, and allowed him, the son of one of her oldest and most faithful ministers, to lie in a common sponging-house for a debt of £800.

He did not, however, gain much from his fidelity to this sovereign, who either did not discern, or wilfully neglected his merits. On the accession of James in 1603, he had every thing to expect from the disposition of that monarch, who was a lover of letters, and desired to distinguish himself as a patron of learning. Bacon possessed the additional title to his favor that his eloquence and information gave him great weight in parliament. Appointed by the house on the committee to make a representation of the misconduct of the royal purveyors, he discharged the task with so much discretion that while he satisfied the king, he won from the house a vote of thanks. James made him one of his counsel, an office to which a small pension was attached, and from that time he continued to rise in spite of the opposition of the Cecils, and the rivalry of Sir Edward Coke, the attorney-general. In 1607 he was made solicitor-general, by which his practice in Westminster hall was rapidly extended. About the same time he married Alice, daughter of Benedict Barnham, a wealthy alderman of London—thus succeeding in his third attempt at a wealthy marriage. His tact, his knowledge, and his eloquence combined, raised him to the highest point of reputation in the commons, while his standing at the bar was every day confirmed, and his favor at court was increased. But these political and personal struggles did not separate him from those philosophical inquiries which were the first love of his heart. In the year 1605 he published "The Advancement of Learning," a work which inaugurated an era in the history of English literature and science. It professed to be a survey of existing knowledge, with a description of the parts of science yet unexplored, and might be regarded as a picture of both the cultivated parts of the intellectual world, and of its outlying, untrodden deserts. In the outset he examines the objections to learning; he next points out the advantages of learning; he then describes the places of it in the universities; and finally, the repositories of it, or books and libraries, which are the "shrines where all the relics of the ancient saints, full of true virtue," are preserved. Having thus cleared the way, he proceeds to investigate all the different kinds of knowledge, dividing it into that which relates to the memory, or history, that which relates to imagination, or poetry, and that which relates to the understanding, or philosophy. Methodically digested, comprehensive in view, abounding in information, profound in thought, and brilliant with imagery—this work alone would have been sufficient to place Bacon among the intellectual giants of his race. Yet his active and vigorous mind continued to busy itself with other speculations; beside his many speeches in the commons and his arguments at the bar, he wrote numerous tracts, such as "A Discourse on the Happy Union;" an "Advertisement, Touching the Controversy of the Church of England," and pamphlets upon law reform,

and other topics of prevalent interest. All the while he was also employed in meditating the great *Novum Organum Scientiarum*, of which sketches, or as the artists would say "studies," were prepared in the shape of his *Cogitata et Vita*, the *Filum Labyrinthi*, and the *Temporis Partus Maximus*. His lesser writings he undertook, as he says, to secure him a degree of respect and consideration in the general mind, which might afterward serve to conciliate it toward the peculiarity of his opinions, or to answer as a bulwark against unfriendly assaults. In this intention he wrote and sent forth, in 1610, the "Wisdom of the Ancients," a book in which the classical fables are made the vehicles of original and striking thoughts, clothed in remarkable beauty of language, and ornamented with graceful figures. Meantime his political advancement went steadily forward; in 1611 he was a joint judge of the knight marshal's court; and the next year he was appointed attorney-general, and elected a member of the privy council. While he held the attorney-generalship he was engaged in several important causes. He was the prosecutor of Oliver St. John, of Owen and Talbot, and of the old clergyman Peacham, who was indicted for the treason contained in a sermon which was never preached. It is said that he was examined in the tower under torture, and that Bacon was present, assisting at the operation. It is a curious fact that the founder of modern philosophy should have consented to the barbarous system of extorting evidence by suffering. A more important trial than either of these, in which he was concerned, was that of the earl and countess of Somerset and their accomplices, for the murder of Sir Thomas Overbury, in the conduct of which he earned the highest distinction. The pecuniary embarrassments under which he once suffered, were of course now at an end. His professional practice was large; the attorney-generalship was worth £6,000 per annum; as register of the star-chamber he was entitled to £1,600 per annum; his father's seat at Gorhambury had passed to him in consequence of the death of his brother; and he was also possessed of a considerable estate in Hertfordshire, beside the fortune acquired through his wife. In 1616 Bacon relinquished the bar, but retained his chamber practice. In the spring of the following year, the lord chancellor, Ellesmere, resigned the seals, which were handed over to Bacon, with the title of lord keeper. In January of 1618 he was created lord high chancellor, and the same year was raised to the peerage as baron of Verulam. His higher title of viscount St. Albans was not conferred upon him till 1621. Bacon entered upon his judicial duties with elaborate pomp, and delivered a long and eloquent speech in the presence of the judges and the nobility. On January 23, 1620, he celebrated his 60th birthday, commemorated by the indifferent poetry of Jonson; and thus, having reached the summit of political prefer-

ment and of personal ambition, at the top and maturity of his genius, surrounded by innumerable friends, and able by his illustrious position as well as by the frequent demonstrations of his more illustrious talents, to command an audience, he thought it a fitting time to give to the world the great *Novum Organum*—the great restoration of the sciences, which had been the burden of the thoughts of his life. It was in October of 1620 that it was first printed. Twelve times it had been copied and revised before it assumed the shape in which it was committed "to posterity."—The full title of Bacon's work was the *Novum Organum sive Indicia Vera de Interpretatione Naturæ, et Regno Hominis*, and the title sums up its principal object. He proposed to substitute the scholastic logic, represented in the *Organon* of Aristotle, by a new organon, in which the true and solid principle of investigating nature, should supplant the old principle of mere verbal dialectics, and lead to "fruit" in the shape of genuine knowledge. It was written in Latin, because it was addressed especially to the learned men of Europe, and in axioms, or short pithy sentences, that it might strike upon their minds by its repetitions, and be easily engraved upon the memory. It is yet, however, but a part of a larger work—of that *Instauratio Magna*—in which he designed to rehabilitate not only the methods of science, but science itself, and of which the *De Augmentis* was an opening chapter, and the whole of modern discovery the completion. In this place, of course, we cannot so much as give an outline of its contents. Bacon's leading thought was the good of humanity. He held that study, instead of employing itself in wearisome and sterile speculations, should be engaged in mastering the secrets of nature and life, and in applying them to human use. His method, in the attainment of this end, was rigid and pure observation, aided by experiment, and fructified by induction. Instead of hypotheses he asked for facts, gathered laboriously from the watch of nature's silent revolutions, or extorted skilfully by instruments and trials, and carried forward by careful generalizations from the world of the known to the unknown. From effects to causes, and not from causes to effects, was the spirit of his recommendations. And that he might not mislead any one by mere general views, Bacon constructed the new logic of observation and induction, and sought to exemplify it in numerous instances. It is in this latter process that he has the least succeeded; but it would be unjust to judge of Bacon's system by its failures. He did not propose to himself, in the *Novum Organum*, to make discoveries, but simply to cause them to be made, or to teach the art by which they could be made. He compared himself to those statues of Mercury which indicate the way, although they do not pass over it themselves, or to a trumpet which sounds the charge, while it takes no part in the battle. Yet even

in this, the least happy part of his work, Bacon exhibits a fine scientific sense, and anticipates discoveries reserved as the reward of later research. He clearly, for instance, invented a thermometer (l. ii. aph. 18); he instituted ingenious experiments on the compressibility of bodies, and on the density and weight of air: he suggests chemical processes (aph. 48); he suspected the law of universal attraction (aph. 85, 86, and 45), afterward demonstrated by Newton; he foresaw the true replication of the tides (aph. 45, 46) and the cause of colors, which he ascribes to the manner in which bodies, owing to their different texture, reflect the rays of light. Nor did Bacon, as some have wrongly supposed, confine his method to the natural sciences alone; he clearly intended its use in psychological investigations as well; and the metaphysics of the catch school are an attempt to render mental science according to his rules.—This immense and unprecedented book was received—as such books must be—with admiration by a discerning few,—but with ridicule and scorn by the would-be wits and geniuses. Bacon's old enemy, Locke, wrote upon the title-page of a presentation copy, having the device of a ship passing the pillars of Hercules,

It deserveth not to be read in schools,
But to be freighted in the ship of fools,

which was neither good sense nor good poetry. Others said that he wrote of philosophy like a lord chancellor. King James, in his pedantic conceit, compared it to the peace of God, which passeth all understanding. Yet there were some who perceived its truth, among the rest Ben Jonson, the poet, and Sir Henry Votton, the latter of whom, addressing him, said, "Your lordship hath done a great and everlasting benefit to all the children of nature, and to nature herself in her uppermost extent of latitude: who never before had so noble and so true an interpreter: never so inward a secretary of her cabinet." And this has been the almost unanimous opinion of posterity. But the glory of Bacon ascended on the eve of the most disgraceful fall. His moral dignity was not on a level with his intellectual penetration. He had a broad, and deep, and vigorous, but not a lofty nature. Giving himself up to improvidence, his need of money betrayed him into practices of corruption. In the house of commons on March 15, 1621, Sir Robert Phillips reported from a committee appointed to inquire into the abuses of courts of justice, 2 cases of corruption against the lord chancellor. One of these was on a petition of a man named Aubrey, who alleged that he had paid Bacon £100 to advance a suit; and another on that of one Egerton, who had given him a gratuity of £400. Before the close of the proceedings, similar cases to the number of 24 were presented. The commons referred the case to the house of peers, as the only tribunal capable of trying the lord chancellor. Bacon resolved to stand up manfully against his accus-

ers; but, his health giving way, he could only write to the lords. He requested that his case should be conducted according to the strictest rules of justice, to which the lords replied that it should be. His friends he assured in the strongest terms of his innocence. In 14 cases it was shown that the presents were given long after the suits were terminated; in other cases the decrees which he rendered had been against the donors; and in other cases the presents were considered not as gifts but as loans, and he had decided against his creditors. Yet, when brought to the test, Bacon submitted to the accusations. His submission, it is alleged, was brought about by the king, who even persuaded Bacon to sacrifice himself as a tub to the whale of popular excitement. On April 22, 1621, he wrote to the lords that he abandoned his defence, and moved them to condemn and censure him. The house required that he should furnish categorical answers to the several articles of charge, which he did, saying to each "I do plainly and ingenuously confess that I am guilty of corruption, and do renounce all defence," &c. A deputation of the lords being appointed to wait on him, to ask if the confession was his, he said: "It is my act, my hand, my heart. I beseech your lordships, be merciful to a broken reed." His humiliation was complete, and his spirit was crushed within him. He hoped that the king, or his son, or their favorite Buckingham, would interfere to stay the sentence; but they refused. On the 8d of May, he was sentenced to a fine of £40,000, and to imprisonment in the Tower during the king's pleasure. He was released from imprisonment after 3 days, and the fine was subsequently remitted; but his disgrace was final. Once afterward he was summoned to attend parliament; but he never recovered his standing, and he spent the remainder of his days in scientific studies, and among the few friends whom adversity had left him. His "History of Henry VII." and some works on natural history were all that he published after his fall.—A more melancholy close to a career so brilliant,—regard it in any light,—can scarcely be contemplated. The imputations on his honor were doubtless exaggerated by the prejudices of the day, but his own confessions force us to believe that they were well founded, or else that he, in base subserviency to the court, subscribed himself a liar. Mr. Basil Montagu, in his admirable, though partial, life of Bacon, adopts the latter alternative, and argues against his corruption in favor of his weakness. But the excuse is scarcely less debasing than the fault; while there is a palliation of the fault, which does not justify the excuse, but rather renders it the more gratuitously base. The practice of receiving gifts was an habitual one; and Bacon probably spoke the truth when he averred that he had been the justest chancellor for many years. He died, saying in his will that "my name and memory I leave to foreign nations

and to my own countrymen, after some time be passed over."—Foreign nations and his own countrymen have accepted the trust. Without forgetting how he acted unworthily of his noble endowments, they have been disposed to pass lightly over his defects, in consideration of his services. His deeds have mostly dropped away from memory with the occasions in which they originated; but the greatness and usefulness of his thoughts have won his name an imperishable glory. As a man on whom God had showered the finest gifts of the mind; as a student to whose penetration and curiosity the whole world of knowledge lay open as a book; as a reformer, who, like another Hercules, wielded his club among the abuses of the law and of learning; as a philosopher, who laid the foundations of our modern science; and as a Christian, who bowed his mighty intellect in humble penitence before the Son of Mary,—he has become the peculiar distinction of the foremost among the civilized nations. Whenever the orator or the writer wishes to illustrate the intellectual dignity of England, he refers to Bacon, as her most illustrious example, and the whole world, enamored of the high thoughts, the expanded knowledge, the profound sagacity, and the glowing imagination of his books, treasures them as among the richest legacies of time. Not without reason did he utter of himself, in a moment of sublime self-reliance: "I have held up a light in the obscurity of philosophy, which will be seen centuries after I am dead."—Bacon's life has been written by the Rev. William Rawley, who was his secretary and chaplain, London, 1668; by W. Dugdale, in the *Baconians* of Thomas Tenison, 1679; by Robert Stephens, London, 1784; by David Mallet, at the head of an edition of his works, 1740; and by M. de Vauzelles, Paris, 1838. The best and most complete edition of his works is that of Spedding, Ellis, and Heath, London, 1857. Basil Montagu's edition (London, 1825-'84) was the occasion of Macaulay's famous essay on Lord Bacon. *Bacon, sa vie, et son influence*, by Rémusat (Paris, 1857), is a valuable work. An important monograph on Lord Bacon, entitled *Frans Bacon von Verulam*, by Kuno Fischer, was published in Leipzig, 1856.—[In the foregoing article the professional life of Lord Bacon as a lawyer having been slightly treated of, the following sketch, by another contributor, has been added for the purpose of supplying that deficiency, which, indeed, is a common one in almost all the biographies of Bacon.] Lord Bacon had a capacity no less adapted to grapple with the principles of legal science than to illustrate other departments of knowledge. It was, however, unfavorable to the accomplishment of as great results in the profession to which he devoted so much of his life, not by choice, but constrained by his straitened circumstances, that he lived at a time when the English law consisted mostly of barren precedents, and judges were averse to any reasoning that had not some analogy

to cases already decided. The time had not come for systematizing the common law and developing the principles of law underlying the fragmentary expositions by judges in the reported cases. Neither Queen Elizabeth nor King James perceived the advantage which would have resulted from it—they doubtless derived their opinion from the judges themselves, and from the prominent lawyers, some of whom were, no doubt, actuated by a jealousy of the philosophical genius which Bacon possessed, and which admirably fitted him for the work of bringing into order the chaos of law as it then existed. It is probable, however, that his contemporaries doubted his practical capacity.—Most of his writings upon law were published late in life, or not till after his death; and though his arguments before the courts ought to have put an end to any such distrust, yet the fact of his great devotion to other sciences was to the narrow-minded bar and bench of that period of itself enough to keep alive a prejudice, in spite of all the evidence afforded to the contrary by his great forensic efforts. Robert Cecil, the son of Lord Burleigh, spoke of him in one of his letters as "a speculative man indulging himself in philosophical reveries, and calculated more to perplex than to promote public business." And Queen Elizabeth remarked, when the appointment of Bacon as solicitor-general was urged by her favorite Essex, "that he had a great wit and an excellent gift of speech, and much other good learning, but in law she thought he could make show to the uttermost of his knowledge, rather than that he was deep."—The earliest of Bacon's writings on law, which he entitled the "Elements of the Common Law of England," consisting of 3 treatises on "Maxims of the Law and the other Uses of the Law," appears to have been written in 1596, though not published till after his death. It was dedicated to Queen Elizabeth, and was doubtless submitted to her, though she would of course depend upon the judgment of her lawyers as to its merits. That judgment was unfavorable, as may be inferred from the fact that it elicited no encouragement to proceed in the work. And yet this work, thus forisfamiliarized by the queen and the English bar, must strike any one at the present day as exhibiting all the promise of legal acumen which we should have expected from his great powers of mind.—The *Maxims* exhibit the same nice discrimination of analogies that was afterward shown in his popular treatise on the "Colors of Good and Evil." He says in the preface that he had collected 300 *Maxims*, but that he thought best first to publish some few, that he might from other men's opinions either receive approbation in his course or advice for the altering of those which remain. He received neither. The *Maxims* expounded were but 24 in number, and all the residue were, by this cold reception, lost to the world. Few cases are cited from the books, for which he gives the reason that it will appear to those who are learned in the laws that his instances

"are mostly judged cases, or sustained by similitude of reason, but that in some cases he intended to weigh down authorities by evidence of reason, and therein rather to correct the law than either to sooth a received error, or by unprofitable subtlety, which corrupteth the sense of the law, to reconcile contrarieties."—It is a common remark that he was not the equal of some others, particularly Lord Coke, in applying and reasoning from cases, but it is entirely untrue if by that be meant less discrimination of adjudged cases. On the contrary, no man excelled him in exact judgment of authorities; but often he found these authorities unsupported by just principles, or so conflicting that the rule was to be sought from reasoning, independent of reported cases.—Sixteen years later when he had become attorney-general, he again referred to this subject in "A Proposal for Amending the Laws of England," a tract addressed to King James, in which he speaks of the method of expounding the laws upon the plan which he had attempted in his early treatises, as certain to be productive of great advantage, and professes his willingness to resume his labors if desired by the king to do so. And with the true dignity of a mind conscious of great powers, he adds: "I do assure your majesty, and am in good hope that when Sir Edward Coke's reports and my rules and decisions shall come to posterity, there will be, whatsoever is now thought, question who was the greater lawyer." The king, however, was too much taken up with petty disputes about his prerogative to realize at all the benefit which would have accrued to the nation, and the lasting renown which would have redounded to himself by the acceptance of this offer. He neglected it, and again an opportunity was lost of remoulding the English law such as has never since occurred. We can scarcely over-estimate the change which such a mind as Bacon's would have wrought in the incoherent and crude system which has descended to us as the common law, modified, indeed, since his time, by many and great improvements, but which even now retains much that is entitled to no other respect than what may be due to great antiquity. During the 5 years that he survived his impeachment and removal from office, Bacon again recurred to this favorite project, or rather he seems never to have laid it aside. A treatise on universal justice, consisting of 97 aphorisms, is contained in the *De Augmentis*, published during that period, which, he says, he wishes "to serve as a specimen of that digest which we propose and have in hand." The digest referred to is explained in an offer addressed to the king about that time. The plan he had in view was somewhat different from that which he had formerly proposed. It was to arrange into some order all the laws, whether statute or common law. "As for myself (he says), the law was my profession to which I am a debtor, some little helps I have of other arts, which may give form to matter, and

I have now, by God's merciful chastisement, and by his special providence, time and leisure to put my talent, whatever it is, to such exchanges as may perhaps exceed the interests of an active life." The offer met with the same fate as the preceding one. Bacon says, in a letter to Bishop Andrews: "I had a purpose to make a particular digest or recompilement of the laws of mine own nation, yet because it is a work of assistance, and that which I cannot master by my own forces and pen, I have laid it aside." Of his other law writings, the "Readings on the Statute of Uses" is the most elaborate. It has now no practical value, in consequence of the change in the laws wrought by time, but it is esteemed by those who have examined it critically, a very profound treatise. The argument in the case of the *postnati* of Scotland, the speech in the star-chamber upon private duelling, an account of the office of compositions for alienations, and his speech in the star chamber upon his taking his place as lord chancellor, are the most interesting of his forensic efforts.

BACON, JOHN, an English sculptor of some distinction, born at Southwark, in Surrey, Nov. 24, 1740, died Aug. 4, 1799. His father was a cloth-worker, who apprenticed him at an early age to a porcelain manufacturer, in whose employment he learned the art of painting on china; and also of making ornamental figures in that material. His taste for modelling was so decided that he soon attracted the attention of the sculptors who were in the habit of sending their clay to the pottery works to be baked. In 1758, being then 18, he sent a small figure of Peace to the society for the encouragement of the art, which received the premium of ten guineas. On 9 successive occasions he carried off similar prizes from the society. Bacon was then employed at Lambeth, to make statues of artificial stone,—a new art, which, if he did not discover it, was greatly indebted to his ingenuity and perseverance for its success. On the opening of the royal academy in 1768, he gained the first gold medal for sculpture. Two years later, he was chosen an associate of that body. A statue of Mars, which he exhibited about that time, gained him a great reputation, when he removed to London, and entered upon a highly prosperous professional career. His principal works were a monument of the founder of Guy's hospital, Southwark; a monument of Lord Chatham, in Guildhall; a monument to Lord Halifax, in Westminster abbey; the statue of Blackstone, in All Soul's college, Oxford; a recumbent figure of the Thames, in the court-yard of Somerset House; the statues of Howard and Johnson in St. Paul's cathedral; and a second monument of Chatham in Westminster abbey. In these works Bacon evinces mechanical skill, and a sharp eye for reality, but his works cannot be regarded as specimens of the highest style of art. His life was written by Cecil; and there is a full account of him in Allan

Cunningham's "British Painters and Sculptors," vol. iii.

BACON, LEONARD, minister of the Centre church, New Haven, Conn., born in Detroit, Mich., Feb. 19, 1802. His father was a missionary to the Indians, sent by the missionary society of Connecticut, and the first settler of the town of Tallmadge, Ohio. The son was graduated at Yale college in 1820; spent 4 years in his theological studies at Andover, and was installed pastor over the Centre church in March, 1825. This connection still exists. In the course of his long residence at one of the literary centres of this country, and of a constant training in authorship, Dr. Bacon has grown to be regarded as one of the principal cultivators of the didactic theology of New England, and as perhaps the most thorough among them. He is the champion of her church Congregationalist polity, and renowned as a controversial writer in support of the views of the greater portion of those who adhere most closely to the traditions and practices of her Puritan settlers. He is a very voluminous author—has written an immense number of occasional addresses and sermons, beside those which come within his regular duty; is the author of a volume of historical discourses, and has been a constant contributor to various theological periodicals. In this manner he has been connected with the "Christian Spectator," the "New Englander," for which he is, beside, president of the managing committee, and with the "Independent," a religious newspaper of New York, of which he is one of the editors. His articles of late in the "New Englander," have been of a politico-religious character, severely denouncing the course of the national government on the subject of slavery. Both as a preacher and writer, his most conspicuous quality is an earnest severity, although the effort is not unusual to enliven the treatment of a subject by the use of irony and sarcasm.

BACON, NATHANIEL, commonly called the Virginia rebel, was probably a native of England, born about the year 1646, died Oct. 1, 1676. During the administration of Sir William Berkeley as governor of Virginia he removed to that colony, where his commanding abilities as a lawyer and his popular deportment gained him many friends. In less than 8 years after his arrival he was chosen a member of the council. A contemporary pamphlet speaks of him as "but a young man, yet master and owner of those induments which constitute a compleate man (as to intrinsecalls), wisdom to apprehend, and discretion to chuse." He possessed a considerable estate at the head of James river, and was related to Col. Nathaniel Bacon, an old member of the council, who is described as "a very rich politick man, and childless, designing this kinsman for his heir." But at that time the colony was distracted by popular discontents. Gov. Berkeley had been appointed by Charles I. in the place of Sir John Hervey, whose tyrannical,

corrupt, and rapacious government had procured his dismissal at the indignant request of the planters; but his own conduct was not of a kind to allay the previous excitement. For a time his liberality and mildness, combined with his pleasing social qualities, conciliated esteem, but his inefficiency in repulsing the Indians who ravaged the frontiers, the high rate of the taxes, imposed to support a series of useless forts, and a disposition on the part of the "court people" to restrict the elective franchise, aroused a general feeling of opposition and resentment. At length the people rose in arms, ostensibly to repel the hostilities of the savages, but in reality to force the authorities to do their duty. The remissness of the latter was ascribed to a profitable traffic which they were supposed to carry on with the enemy. Bacon was at once pointed out by his position, his eloquence, and his courage, as the leader of the movement. He demanded of the governor a commission confirming his appointment as general of the forces about to proceed against the Indians by the people. This was refused, and a proclamation issued ordering the insurgents to surrender, under penalty of treason. They paid no attention to it, and proceeded against the Indians, whom they met and defeated. The governor raised a force to put them down, but was prevented by another insurrection under Ingram and Walklate. The ferment, in fact, became so general that Berkeley, in June, 1676, made concessions to Bacon. He promised him a commission, dismantled the forts, dissolved the old assembly, and issued writs for a new election. It soon became evident, however, that Berkeley was acting treacherously, when Bacon and his friends resumed their arms, and forced him to consent to their demands. They then marched to the frontiers, when Berkeley again proclaimed them rebels. Bacon retracing his steps, a desultory civil war broke out, in the course of which Jamestown, the capital of the colony, was burned to the ground. In the end the governor was obliged to seek shelter in some English vessels lying in James river, but before Bacon could complete his plans in respect to a new government, he died of a disease contracted during one of his Indian campaigns. Soon after his death the rebellion itself was extinguished. Many of the persons who had taken part with him were executed. A full account of these troubles is to be found in the "Tracts and other papers relating principally to the origin, settlement, and progress of the colonies of North America, from the discovery of the country to the year 1776," by Peter Force. Washington, 1840.

BACON, SIR NICHOLAS, was the lord-keeper of the seal for a long period, during the early part of the reign of Queen Elizabeth, born of an ancient and opulent family, at Chiselhurst, in Kent, in 1510, died Feb. 20, 1579. His education he received at Corpus Christi college, Cambridge, after which he studied at Paris. In 1587 he was appointed solicitor to

the court of augmentations; 9 years later Henry VIII. made him attorney to the court of wards—an office of great responsibility and trust—in which he was continued during the reign of Edward VI. Having adopted the Protestant religion, he was excluded from all favor under Mary; but on the accession of Elizabeth he entered her privy council. In 1558 he received the great seal, with the rank and authority of lord chancellor. At the public conference held in Westminster, to consider the doctrines and ceremonies of the church of Rome, Sir Nicholas Bacon presided. Being suspected, in 1564, of having a hand in a book written by one Hales, and which questioned the title of Mary, queen of Scots, to succeed Elizabeth—a view of the case not then held by the court—he was dismissed from the privy council, and from all participation in public affairs, except in chancery. As he appears to have been wrongly suspected, he was afterward restored to favor, leaving behind him the reputation of a man “full of wit and learning—of a sound lawyer, and of a true gentleman.” His fine form and personal dignity caused Elizabeth to say of him, “My lord-keeper’s soul is well edged.”

BACON, PHANUEL, a divine of Oxford, who ad more repute in his day for his wit and humor than for his divinity. Among his publications, none of which are now remembered, are a ballad called the “Snipe,” a poem named the “Artificial Kite,” and several dramatic attempts, such as the “Oculist,” the “Moral Quack,” &c. He died in 1785.

BACON, ROGER, generally called Friar Bacon, born at Ilchester, in Somersetshire, in 1214, died in 1292 or 1294. He was known in the scholastic ages as the Admirable Doctor, and was the most eminent of English natural philosophers, previous to the era of his nameake, the great Bacon. At an early age he was sent to Oxford to be educated, whence he passed to the university of Paris, then the most famous centre of learning in Europe. Here he took his doctor’s degree, and also entered the order of the Franciscan monks. After the year 1240, we find him returned to Oxford, and in a convent of his order, pursuing the study of languages and of natural philosophy. Arabic, Greek, and Hebrew he learned, to enable himself to read Aristotle, and the most noted commentators upon him in the originals. At the same time he studied mathematics, physics, and astronomy, and that he might acquire his knowledge of nature at first hand, he made many costly experiments, and constructed many costly instruments. In less than 10 years he spent more than 2,000 French crowns in this way, furnished either by his family or the munificence of friends. But experimental science was little in vogue at that time, and his researches excited the hostility of his fellows. Taught to regard philosophy as little better than heresy, and connecting its results with those of magic, the clergy prohibited the

lectures of Bacon, and confined the circulation of his writings to the walls of the convent. All the clergy, however, were not so illiberal; Robert Grosseteste, the bishop of Lincoln, befriended his efforts; and in 1265, when Clement IV., who had been a cardinal-legate in England, and had heard of Bacon, was raised to the papal office, he despatched Raymond de Loudun to the Franciscan monk to procure some of his writings. Bacon sent him a work called the *Opus Majus*, together with 2 other supplementary works, the *Opus Minus* and the *Opus Tertium*. It is not known what reception Clement gave them, but he had scarcely got them in hand, when he died, 1268. From that time, up to the year 1278, Bacon was allowed to prosecute his inquiries in peace; but, in that year, Jerome of Ascoli, who afterward appears as pope under the name of Nicholas IV., repaired to Paris as the superior of the Franciscan order, and was induced to commence proceedings against his Oxford subject. He was summoned to Paris, where a council of Franciscans condemned his writings, and sent him to prison. He was then in his 64th year; and for 10 years he languished in that dreary confinement, appealing in vain to the popes for release. Some say that he died in the prison; but the better authority is that he was permitted to return to Oxford, where he died. The *Opus Majus* is the chief monument of his genius, although Bayle and others pretend to reckon up some 101 of his treatises, on various subjects. His chief printed works are *Perspectiva*, Frankfort, 1614; *De Speculis*, Frankfort, 1614; *De Mirabili Potestate Artis, et Naturæ*, Paris, 1542; *De Retardandis Senectutis Accidentibus*, Oxford, 1590; and the *Opus Majus*, edited by Dr. Jebb, London, 1557. Manuscripts of his writings exist in the Cottonian, Harleian, Bodleian, and Vatican libraries. A second manuscript of the *Opus Tertium* was found in the library at Douay, by Victor Cousin, who gave an account of it, with an elaborate criticism of Bacon and his philosophical character, in the *Journal des Savans* for 1848. Bacon’s great work had little influence in its day, but is remarkable for its anticipation of the spirit of modern science. Taking it for granted that he lived at an era of profound intellectual torpor and ignorance, he inquires into the causes of it, and finds them to be: 1, too much blind confidence in authority; 2, too much respect for custom; 3, too much regard for popular prejudices; and 4, too much conceited selfishness, which induces one to regard as dangerous or puerile whatever he does not know. These correspond very nearly with the several *idola*, which Chancellor Bacon subsequently held to be the great obstacles to true knowledge. Roger Bacon also claimed for human reason the right to exercise a severe control over all the doctrines submitted to its approbation; he insists upon the dignity and the importance of the sciences, none of which are to be proscribed, and all of which are to be

cultivated; and he establishes experience, rather than reasoning, as the proper method of research. In all this again we have a rude outline and precursor of the doctrine of the author of the *Novum Organum*. Roger Bacon fell into many errors on the subject of alchemy and astrology, but his scientific genius was wonderful. His writings anticipate the discovery of the telescope; he was acquainted with the composition of gunpowder; and the whole tone of his mind, the whole scope of his thought, were 2 or 3 centuries in advance of his generation.

BACON, SAMUEL, an Episcopal clergyman, one of the agents employed by the U. S. government to establish a colony in Africa. In company with Dr. Crozer and Mr. Bankson, he set sail for Sierra Leone with 82 negroes, and arrived there March 9, 1820. From this place the passengers and stores were conveyed to Campelar, on the Sherboro river, in a vessel purchased for the purpose. In a few weeks after their arrival Mr. Bacon's 2 associates died, and he himself, in view of his declining health, had to be removed to Kent, at Cape Shilling, where he died on May 8, 1820.

BACONTHORP, JOHN, called the Resolute Doctor, a learned English monk, was born at Baconthorp, in Norfolk, at the close of the 13th century, and died at London in 1846. He lived for some time in Paris, where he enjoyed great celebrity as a scholar, and was considered the leader of the Averroists. In 1833 he was summoned to Rome, where he first asserted the pope's sovereign authority in cases of divorce. His works have passed through several editions.

BACS, or BACSKA, a circle in Hungary, between the Danube and the Theiss, area 3,586 sq. m., pop. 863,000. The Mosztonga is the only river of importance that flows through its territory, and this, with its sluggish current, forms innumerable swamps during its course toward the Danube. There are several large lakes, the most remarkable of which is the salt lake of Palitz, near Maria Theresiopol. The soil in some districts is of such exuberant fertility as not to require manuring; in other parts so arid and barren as to be almost useless. The productive portion of its surface is, however, estimated at 1,785,700 acres, nearly one-half of which is said to be arable. It seldom produces less than from 500,000 to 600,000 quarters of grain annually. The most important of its cereal crops is wheat, which it yields in great abundance and of superior quality. The vineyards occupy about 88,120 acres. Hemp is cultivated, and even passable tobacco is raised in particular localities. Along the banks of the Danube there are forests of oak and other trees. The pasture lands are estimated at 552,850 acres, which are devoted to the rearing of horned cattle, horses, and sheep. Swine are frequently fed in this part of Hungary on the fish caught in the swamps that are formed by the Mosztonga and Theiss. There is an abundance of capi-

tal fruit, and madder, woad, and silk are raised in the vicinity of Apatin, while on the Danube and Theiss there are valuable fisheries. The majority of the people are Roman Catholics, but there are also considerable numbers of Jews. Capital Bacs; pop. 7,500.

BACSAÑYI, JÁNOS, a Hungarian poet, born at Tapolca, May 11, 1763, died at Linz, May 12, 1845. In 1785 he was appointed to a public office in Kaschau, but was dismissed in 1793, on account of the liberal notions of one of his poems. In 1794 he was implicated in a conspiracy with Bishop Martinovich, and consigned to the Spielberg prison. After his release from prison he was employed at the bank of Vienna, but in 1809, on occasion of the occupation of Vienna by the French army, he translated Napoleon's proclamation to Hungary into Hungarian, for which he was obliged to leave Vienna. He betook himself to France. After the conclusion of the treaty of Paris he was surrendered to the Austrian authorities, who gave him his liberty, under condition that he would not leave the city of Linz, where he died at the advanced age of 82. He is the author of *A magyarok vitézsége* (Bravery of the Hungarians), Pesth, Oct. 1785. This was his maiden effort. A collection of his miscellaneous poems appeared at Pesth in 1827. He was one of the founders of the "Magyar Museum" (Kaschan and Pesth, 1788-1792). He married at Vienna in 1805 the German poetess Gabriele Baumgarten, but the union did not prove a happy one.

BACTRIA, or BACTHANA (modern Bokhara), an ancient kingdom of Asia, bounded N. by the Oxus, E. by Asiatic Scythia, S. by the Paropamisian range, and W. by Margiana. The country, though in some parts sterile and unproductive, was, as a whole, very fertile, and the inhabitants a brave and warlike race. It became a province of Persia about the reign of Cyrus, and after being conquered by Alexander formed a part of the dominions of the Seleucids until 256 B. C., when Theodotus, the governor, revolted. Bactria maintained its independence throughout, until 126 B. C., when it was conquered by the Parthians under Mithridates. Genghis Khan conquered it in 1221, Tamerlane in 1869, and his successors ruled over it for 180 years. In the beginning of the 16th century the Usbecks got possession, and since then its history belongs to the khanate of Bokhara. The ancient capital was Bactra, or Zariaspa; the modern town of Balk occupies its site.

BACTRIAN COINS. The history of the Græco-Bactrian period has had much light thrown upon it within the last 20 years, by the discovery of a large collection of Græco-Bactrian coins, ruins, and sepulchres. On some of these coins the Greek language is mixed with a foreign dialect of the Zend family. It appears that the Greek language also held its footing for a long time after the Scythian irruption. The English travellers and antiquaries, Prinsep and Wilson; the French and German, Raoul Ro-

chetta, Lassen, Grotefend, Offried, Müller, have been the workers in this department of learning. The best authorities are Wilson's *Ariana Antiqua* (1841) and Lassen's *Indischen Alterthumskunde* (1849).

BACZKO, Ludwig von, born at Lick, East Prussia, June 8, 1756, died at Königsberg, March 27, 1823. The interest of his life hangs upon the fact that he was a blind author, like the English Milton and the French Thierry. He became blind in his 21st year, from an attack of small-pox. In 1816 he was made superintendent of the blind asylum at Königsberg. Among his works are a history of Prussia, 6 volumes, and a history of the French revolution. He wrote also several romances and dramas.

BADAJOZ, a town and fortress of Spain, the capital of Estremadura, on the river Guadiana, 82 miles N. N. W. of Seville, and 49 S. of Alcantara; pop. about 15,000. It is especially celebrated for its events during the peninsular war. The first of these was the fearful massacre of May, 1808, on the breaking out of the general insurrection against the French. The governor, who wished to suppress the riot, was dragged out of his house, and murdered by the mob. On Feb. 5, 1811, when Massena was in full retreat, before Wellington, from the impregnable lines of Torres Vedras, Soult took up his position before the walls of Badajoz, defended by the veteran, Menacho. Wellington made every effort to enable Mendizabel, the Spanish general, in the field, to raise the siege; and sent to him for that purpose, all the Spanish divisions of his own army, which rendered the Spaniards in the field, without taking the garrison into consideration, fully equal to the French force outside of the fortress. However Mendizabel, the Spanish commander, suffered himself to be surprised and cut to pieces with the loss of 8,000 men and all his artillery, a few escaping, with their general, into Elvas, while 3,000 threw themselves into Badajoz, which now had 9,000 men within the walls, and 170 guns. Unfortunately, however, Menacho was killed during a sally on the evening of March 3, the ramparts were partially breached, and although the breaches were impracticable while the French had but 6 guns in battery, one of which was dismounted, and while it was known that Beresford was on the march to relieve the garrison, at the head of 12,000 men, Imas, who had succeeded to the command of the place, shamefully surrendered it. This disaster, which the duke of Wellington described as, in his opinion, by far the greatest misfortune which had befallen the allies since the commencement of the peninsular war, occurred March 10, 1811; and immediately, as soon as the retreat of Massena was fully developed, Wellington determined to retake the stronghold of Badajoz. It was accordingly invested, May 5, 1811, and though there was not then in the British army a single corps of sappers and miners, nor a solitary private who knew how to conduct ap-

proaches under fire, the siege was begun with great alacrity. But before much had been accomplished, Soult came up from Seville, and the battle of Albuera was fought. After this battle, Wellington, who had come up in person, renewed the siege with the utmost vigor. On June 6, the breach was declared practicable, but on that day and on June 9, the British troops were repulsed in two several attacks, with prodigious loss; and Marmont and Soult coming up with vastly superior numbers, Wellington was reluctantly compelled to raise the siege, and retire into Portugal.—On the morning of Jan. 8, Wellington crossed the Agueda, and resumed the offensive, while the enemy were far aloof. After the capture of Ciudad Rodrigo, by storm, Jan. 18, 1812, Wellington turned his attention toward Badajoz, which he resolved to take by a similar *coup de main*. With great skill and subtlety, he contrived to deceive Napoleon himself, to whom all the details of the war were referred by telegraph, so completely that no steps were taken for the relief of the place, until the English siege artillery was actually before the walls. On March 15, the pontoons were thrown across the Guadiana, and on the 17th the investment of the fortress was completed. It was a place of great strength, most ably defended by Philippon, who by his former successful defence had become thoroughly acquainted with all its strength and weakness, and was admirably seconded in his defence, by a picked garrison of 5,000 men, the flower of the French armies, and whose resistance, although unsuccessful, crowned him with undying honor. On the 24th, as it was known that Soult was energetically striving to raise means for the relief of the place, the advanced post, called the Picurina, though not breached, was stormed and taken, with a loss of 850 men in the assault, which lasted but one hour, although Philippon was confident of making the fort good for 4 or 5 days, and delaying by so long the fall of the place. On the morning of April 6, the walls of the town itself were breached in 8 places, and the breaches were declared practicable, although the countercarp remained entire, and prodigious efforts had been made to retrench the breaches, and to fortify the summit of the ruins, which were rendered impassable by huge beams bristling with sword blades, while the whole ascent was strewed with live shells, and honey-combed with mines, ready to explode under the feet of the assailants.—At 10 o'clock at night the assault commenced, by the most of 2 divisions, in all 10,000 strong, preceded by storming parties each of 500 men, with ladders and axes, led by their respective forlorn hopes, against the 8 breaches, while Picton, with a third division, was destined to storm the castle in the rear, during the progress of the main assaults. Nothing like the loss and carnage of that hideous midnight attack has been recorded in the history of war. The breaches were carried, amid the explosion of mines, the bursting of shells, the roar of

ordnance, and the roll of musketry; but when the top was won, the retrenchments could not be forced, although the men confronted death in every form, and fought hand to hand with the French grenadiers across the barrier. After 2 hours of desperate fighting, in which 2,000 men had fallen within the space of a few hundred square feet—by Wellington's orders, the troops were ordered to retire, and reform for a second attack. But in the mean time, Picton, though he had been once repulsed, scaled the castle, which had not been breached at all, and which, even after it was in the hands of the enemy, Philippon could not believe to have been taken; while Walker, with a brigade of Portuguese, intended only to make a diversion by a false attack, scaled the bastion of Vincente, and, at the very moment when all was in confusion, disaster, and retreat, at the breaches, the English bugles, answering each other from the castle and the great square of the town, announced that the place was lost and won.—The breaches were abandoned; the garrison retreated across the Guadiana, into the adjoining fortress of San Cristoval, where they surrendered at discretion the next morning; the assailants, now unresisted, poured in by the breaches, by the gates, over the ramparts, and, maddened by their losses, and drunk with blood and the furious hour of battle, did deeds that night which might well make the angels weep, and which obscured, if they could not efface, the glory of their wonderful achievement.—Thus in 11 days of open trenches, and 19 of siege, the strongest place in Spain, with 120 heavy guns, and all its garrison of 8,800 men, with their governor, 1,500 having fallen during the siege, was taken, contrary to all the probabilities and chances of warlike fortune.—The conquerors lost 5,000 men and officers, including 700 Portuguese, during the siege; no less than 8,500 of whom (800 of them dead) were stricken down in the last assault. Still, fearful as was the price, it was not too dearly paid; since by the taking of Badajoz, the path was opened into the very heart of Spain, and the career of victory commenced, which only ended when the allied armies defiled through the streets of the French metropolis.

BADAKHSHAN, or **BUDUKHSHAN**, a mountainous district of central Asia, lying between lat. 36° and 38° N., and long. 69° and 73° E., about 20 days' journey E. S. E. of Bokhara. It embraces the valley of the Oxus or Amoo river, with the valleys of its numerous tributaries, and the dividing mountain ridges, nearly to the sources of that stream. The climate is healthy, the valleys and small plains fertile; the natives are uncivilized, and even savage; they are Tadjiks and Mohammedans of the Sheeah sect, speaking the Persian language. Among the mountains of the district are some of the finest quarries of lapis lazuli in the world. Blocks of this stone are sometimes obtained suitable for being cut into large alabs. The rubies are found embedded in a white earth in masses of crystal.

The capital, Fyzabad, is a place of some importance. There is another large town of the same name with the province. Owing to the intolerance of the inhabitants, little has been ascertained respecting this remote region.

BADAKHSHI, **MEULANA**, a Persian poet, who lived in the 10th century, under the reign of Ulug Beg. In his "Divan"—a collection of Persian poems—is found the earliest comparison of the fortunes and misfortunes of life to the sands of an hour-glass.

BADALONA, a town in Spain, pleasantly situated on the sea-coast, in the province of Catalonia, 10 miles N. E. of the city of Barcelona. Pop. in 1846, 8,775, mostly seamen and fishermen. Here the archduke Charles of Austria and the earl of Peterborough landed in 1704.

BADAUMY, a strong fortress of British India, in the province of Bejapore and presidency of Bombay. It consists of 2 fortified heights and a walled town at the base, having an inner fort. On one occasion it defied the assaults of the whole Mahratta army, but it was taken in 1818 by the British, under Sir T. Munro. Pop. 2,500.

BAD AXE, a western county of Wisconsin, bordering on the Mississippi river, and comprising an area of 787 sq. miles. It has an uneven surface and is watered by Bad Axe and Kickapoo rivers, from the former of which it receives its name. It was separated from Crawford county in March, 1851. Capital, Viroqua; pop. in 1855, 4,823.

BADBY, **JOHN**, an English workman, born in the middle of the 14th century, and burnt at Smithfield, as a Lollard and a heretic, in 1404. When Arundel, archbishop of Canterbury, questioned him as to his belief in transubstantiation, Badby replied, "I believe in the holy Trinity, one and indivisible; but if the consecrated host were the body of God, there would be 20,000 Gods in England." The prince of Wales, afterward Henry V., was present at his execution, and exhorted him to retract. In the midst of the fire Badby cried out once, "Mercy!" The prince had the pile extinguished for a space, and invited Badby to retract, but the stubborn English operative told him to go on with the work in hand and get it out of the way.

BADEN, a German grand duchy, situated between lat. 47° 32' and 49° 52' N., and long. 7° 27' and 9° 50' E., bounded N. by Bavaria and Hesse Darmstadt; S., by Switzerland; E., by Wurtemberg and the principality of Hohenzollern; and W., by Rhenish Bavaria and France. It is divided into 4 circles, 74 bailiwicks, and 1,595 communes. The following table gives the extent and population of each of the 4 circles, according to the census of 1852:

Circles.	Sq. Miles.	Bailiwicks.	Communes.	Pop.
Lake.....	1,208	15	376	192,673
Upper Rhine....	1,654	18	448	342,265
Middle Rhine....	1,638	21	839	462,055
Lower Rhine....	1,814	20	392	346,573
	5,904	74	1,095	1,354,566

The capital is Karlsruhe, which, in 1855, had a population of 25,160 inhabitants. The most important commercial city is Mannheim, with 25,667 inhabitants. The most renowned cities of Baden are Heidelberg, the seat of a celebrated university, and Baden-Baden, the famous watering-place. On the western side of Baden, and stretching along the Rhine, is a fertile strip of land, from which the rest of the country rises toward the east. In the southern and eastern parts is the Schwarzwald (Black Forest), extending northward as far as the river Neckar, and on the north of this river is the Odenwald mountain range, which may be considered as a continuation of the Schwarzwald, but much less elevated. The highest peaks of the Black Forest are the Feldberg, 4,650 feet, and the Belchen, 4,397 feet. The highest point of the Odenwald, the Katzenbuckel, is only 2,180 feet high. Between the Rhine and the little river Treisam is the Kaiserstuhl, an independent volcanic group nearly 10 miles in length and 5 in breadth; the highest point of this group is 1,760 feet.—The principal river is the Rhine, which forms the boundary of the duchy on the north and west. The other most important river is the Neckar, and among the smaller rivers are the Main, Tauber, Murg, Kinzig, Wutach, Pfalz, and Elz. The Danube takes its rise in Baden, near the chapel of St. Martin, on the extreme east of the Black Forest, under the name of the Brega. Near Donaueschingen it unites with the Brigach, and with another small volume of water from the palace-yard of Donaueschingen, and on leaving Donaueschingen the river is called Danube. Baden has also a number of lakes, as the Mummel Wilder, Nonnenmattweiher, Yitti, Eichener, &c. A part of Lake Constance belongs to Baden.—In the plains and valleys the climate is mild and agreeable, but in the higher parts it is cold and moist, with snow during the greater part of the year, and with frequently very sudden transitions from winter to summer. But on the whole the climate is very salubrious.—The population of the upper Rhine circle springs from the Alemanni; along the shores of the Murg and the lower Rhine circle the Frankish race preponderates; the population along the lake shores are of Suevian (Swabian) and Vindelician origin. The character of the people is marked by the most sterling qualities of honesty, industry, uprightness, and courage; but the population of the Black Forest is most typical of the ancient German character. The inhabitants along the shores of the Baar are perhaps the most industrious people of Baden. The inhabitant of the Odenwald is the poorest, but the most contented of all. He lives from hand to mouth, but never grumbles. Until 1803 Baden was a margraviate, with an area of only about 1,400 sq. miles; pop. about 250,000. Toward the end of the 8th century Gerold, the supposed descendant of Gottfried, duke of the Alemanni, who died in 709, became margrave of the Baar district, and his great-grandson Berthold built the castle of Zähringen (now in

ruins), near Freiburg, and became the founder of the Zähringen dynasty, under the name of Berthold von Zähringen. The emperor Henry III. created him duke of Swabia. This dukedom subsequently passed into the hands of another prince, and in 1060 Berthold was made duke of Carinthia and margrave of Verona. Berthold's son Hermann acquired Baden by marriage, and, under the name of Hermann I., his son became the first margrave of Baden. After the reign of Hermann IV., who died in 1190, on a crusade, Baden was divided into 2 lines. Hermann V. became the sovereign of the Baden line, and his younger brother, Henry, the head of the collateral line of Hockberg. Hermann VI. died, after a short reign, by poison. His successor, Frederic of Baden, was, together with his friend Conrad, of Swabia, treacherously executed at Naples in 1218. Under Rudolph I. many divisions took place, which for upward of a century created constant agitation and changes. On the death of Christopher I. in 1527, the margraviate was divided among his two surviving sons, who thus formed the two lines of Baden-Baden and Baden-Durlach. The line of Baden-Baden became extinct by the death of Augustus George, in 1771, and its possessions were united with Baden-Durlach, under the long and prosperous reign of margrave Charles Frederic. By the treaty of Luneville in 1801, Baden acquired a considerable addition of territory, and was further increased in 1807, when the margrave received the title of elector. By the treaty of Presburg, in 1808, Breisgau was annexed to Baden. In 1806 on the dissolution of the German empire, on his joining the confederation of the Rhine, the elector received the title of grand duke, and 1,950 square miles of additional territory; some smaller additions in 1809 and 1810, increased Baden to its present extent. Charles Frederic died in 1811, and was succeeded by his grandson, Charles Louis Frederic, who died in 1818. He was succeeded by his uncle, Louis, who reigned from 1818 to 1830, when he died. After his death the throne devolved upon grand duke Leopold, his step-brother, born 1790, who was succeeded by his son Louis. The grand duke Louis, born in 1822, was removed from the throne for mental incapacity. The grand duke Frederic William Louis, born in 1826, the present sovereign, was appointed regent. The government is a hereditary monarchy, vested in the grand duke, who is assisted in the legislation by two chambers, the one of peers, and the other of deputies. The chamber of peers consists of 36 members, 8 of whom are chosen by the grand duke, and 1 by each of the 3 universities; the remaining members are, the Roman Catholic archbishop of Freiburg, a Protestant prelate, and the principal nobility. The chamber of deputies has 64 members, elected by all the male citizens who have attained their 25th year. Each member must be at least 30 years of age, and is elected for 8 years; one-fourth of the members going out every 2 years. During the revolu-

tionary period of 1848-1850, the political institutions of Baden were attacked by the ultra-republican leaders, Hecker, Struve, &c., and by the moderate republicans led by Brentano, Eichfeld, &c., and Baden was thrown into the greatest excitement and confusion, until the assistance of Prussia led, in 1850, to the defeat of the republicans, and the return of the old order of things. Baden occupies the seventh rank in the Germanic confederation, and furnishes of its army of 15,000 men (composed of engineers, &c., 186; infantry, 11,180; cavalry, 1,870; artillery, 1,764), a contingent of 10,000 men to the federal forces. It has 8 votes in the full diet, and one in the minor assembly. By the budget of 1856 and 1857, the clear united revenue for these two years amounted to 20,646,708 florins, and the expenditure to 20,965,498 florins. The public debt in 1856 was 75,248,188 florins, of which 40,580,498 florins was a loan contracted for the construction of railways. The distribution of the surface of the duchy is as follows:

	Acres.	Per cent.
Arable.....	1,478,626	or 24.8
Meadow.....	408,618	2.6
Pasture.....	225,769	5.5
Vineyard.....	68,064	1.6
Gardens.....	87,507	0.9
Woods & forests.....	1,296,861	20.5
Quarries, gravel, & clay pits.....	109	0.0
Waste land.....	21,314	0.5
Buildings, roads, & waters.....	711,594	16.3
	<u>4,944,840</u>	<u>100.0</u>

In the valleys and plains the soil yields most luxuriant crops of wheat, maize, barley, beans, potatoes, flax, hemp, and tobacco; and even in the mountainous districts, rye, wheat, and oats are extensively cultivated. The extensive vineyards produce excellent wines, and the finest fruits are in the greatest abundance. The manufactures are chiefly confined to iron and hardware, and the spinning and weaving of cotton. The Black Forest is distinguished for manufactures of wooden ornaments and toys, watches, wooden clocks, musical boxes, organs, and basket work. St. Blasien is an important seat of ribbon and cotton manufacture. The fabrication of jewelry and tobacco, and cigars, occupies the next rank in importance. The chicory, paper, and cloth manufactures, the tanneries and breweries are also noticeable. Since the union of Baden to the Zollverein in 1855, over 60 new manufactories have been established, giving occupation to 1,500 persons, and producing 3,800,000 florins annually. There are now altogether about 300 manufactories thriving in Baden, employing 9,000 persons, and yielding a yearly produce of 14,000,000 florins. The mineral productions are 7 mark gold, 600 mark silver, 900 cwt. copper, 1,900 lead, 1,300 smoothing-iron, 178,770 iron, 500 manganese, 150 cobalt, 800,000 kitchen salt, 80,000 coals. There are extensive government salt works at Dürreheim and Rappernau. The most excellent iron mines are those of Oberwert and Kandern. Gold washing, formerly extensively carried on along the Rhine, is now little

practised. The mineral springs of Baden are very numerous, as Baden-Baden, Badenweiler, Antogast, Griesbach, Freirsbach, &c. The exports of Baden are wine, timber, breadstuffs, hemp, tobacco, fruits, oil, salt, manufactured articles, &c., and exceed \$50,000,000 per annum. The principal imports are, colonial produce, southern fruits, medicines, horses, wool, cotton, silk goods, iron, steel, and various articles of luxury. The currency is the 24 *Gulden* *Fms*, 60 kreutzers to the florin or gulden. The weights and measures are according to the decimal system. There are 2 universities, one Protestant at Heidelberg, founded in 1886, and one Catholic at Freiburg, founded in 1457. There are also 6 lycœums, 5 gymnasiums, 4 normal schools, 19 higher and 7 Latin schools, beside about 2,000 common schools established throughout the country. At Pforzheim is an institution for the deaf and dumb, and at Freiburg, one for the blind. The Karlsruhe polytechnic school, with a staff of 41 teachers and 350 students, established about 1832, is one of the best in Germany. The preparatory course extends over 8 years, and includes French, English, history, mathematics, drawing, chemistry, mechanics, mineralogy, geology, &c. The special courses are engineering, architecture, forestry, chemistry, mechanics, commerce, and post-office service; and extend over from 1 to 4 years. About 67 per cent. of the population of the grand duchy of Baden are Roman Catholics, 31 per cent. are Protestants, and the rest chiefly Jews, with a small sprinkling of Mennonites.

BADEN, or BAADEW. I. A bathing place of about 3,200 inhabitants, on the river Schwäb, in the Austrian province of the lower Enns, in the circle of the Wiener Wald, within 15 miles from Vienna, and the summer resort of several Austrian archdukes. Baden has 12 warm baths, supplied with water from a hot spring. II. A town, founded by the Romans; pop. about 2-800, in the Swiss canton of Aargau, on the Limmat, a little river which is covered with a magnificent bridge. Here too are hot sulphur springs (117° F.), which make the place a favorite summer resort of the neighboring cantons. The springs were well known to the Romans, who built a castle upon the site where the city now stands. The hottest and most celebrated of the springs is called *Verecund*. Beside the 2 public there are not less than 143 private baths. Baden is a little gem of a Swiss town, the principal street is dotted with Capucin and Franciscan convents, chapels, and churches, and snug houses, and has altogether a charmingly bustling appearance. In the town house of Baden, Eugene of Savoy, who acted as representative of the emperor of Austria, signed the treaty of peace with France, Sept. 7, 1714.

BADEN, JACOB, a learned Dane, born at Vordingborg, in Seeland, May 4, 1735, died in Copenhagen, July 5, 1804. He studied in the German universities and officiated successfully as professor at Altona, Elsinore, and Copenhagen. He exerted a marked influence upon the promotion

of scholarship in Denmark by his manuals of the classics, by his Latin-Danish and Danish-Latin dictionary, and by his Danish grammar, which is the best extant. He was the first to lecture on the Danish language, and gave a further impulse to the formation of a sound literary taste in his country by establishing in 1768, a critical journal (*Kritiske Journal*). He also edited from 1793 to 1801 a journal of the university of Copenhagen. He translated and annotated various writings, including Horace, Tacitus, and other classic authors.—**TORRELL**, son of the preceding, born at Fredericksberg, in Seeland, July 27, 1765, acquired fame as an archaeologist. From 1794 to 1804, he officiated as professor of philosophy and rhetoric at the university of Kiel, and thence to 1823, as secretary of the academy of fine arts, at Copenhagen. He held an opinion in reference to the unfitness of Scandinavian mythology for application to statuary, which involved him in many controversies.

BADEN-BADEN, the most celebrated watering place of Germany, with 26 hot springs, varying in temperature from 116° to 156° F.; the water being conveyed through the town in pipes to supply the different baths. The springs burst out of the rocks at the foot of the castle terrace, and were well known to the Romans, who planted a small colony near by, which they called *Civitas Aurelia Aquensis*. The most important spring is the *Ursprung*, which yields in 24 hours 7,845,400 cubic inches of water. Its specific gravity is 1.080. A pint of the water containing 7,892 grains, contains 23.3 solid matter, 16 gra. of which consist of common salt, 6½ gra. of sulphate, muriate, and carbonate of lime, and the remainder of a small portion of magnesia and of traces of iron, with about half a cubic inch of carbonic acid gas in addition. The water is perfectly clear, has a faint animal smell, is somewhat saltish, and when drunk, as it issues from the spring, tastes very much like weak broth. It has a wholesome effect upon all kinds of dyspepsia, menstrial, scrofulous, rheumatic diseases, the gout, &c. The town of Baden has, with the surrounding farms, about 6,000 inhabitants, belongs to the middle Rhine circle of the grand duchy of Baden, and is delightfully situated on the Oos, in a valley of the Black Forest, about 20 miles S. S. W. of Carlsruhe, connected with the Mannheim and Basel railway. The little town itself is not without historical interest. For 600 years it was the residence of the margraves of Baden. The picturesque ruins of their old castle crown the summit of the Schlossberg. The new castle is remarkable for its subterranean dungeons, supposed to be of Roman origin, and reported to have been in the middle ages the seats of the Vehmish courts. The rock, from which the *Ursprung* bursts out, is still covered with Roman ruins. Baden has a theatre, library, and reading room, excellent hotels, and the other accessories of a fashionable watering place. There is always a brilliant crowd of

visitors in July and August, when the season is at its zenith.

BADEN-BADEN, **LUDWIG WILHELM I.**, margrave of, a German general, born at Paris, April 8, 1655, died at Rastadt, Jan. 4, 1707. Louis XIV. was his godfather. He served first under Montecucculi against Turenne, and then under the duke of Lorraine. At the siege of Vienna by the Turks, in 1683, he threw his forces into the city, and then by a brilliant sally effected a junction with King Sobieski and the duke of Lorraine, who had come for its relief. In 1689, he defeated the Turks at Nissa, and in 1691, at Salankement. He took also an active part in the war against France, in 1693, and after the death of Sobieski, in 1697, aspired to the crown of Poland; but the elector of Saxony was preferred to him. He again commanded in the campaign of 1702, and took Landau, and in 1703 he was defeated by Villars, at Friedlingen and Hochstadt. He signalized his talent for fortifications by building the famous lines of Stollhofen.

BADENNOCH, a district of Scotland, county of Inverness, about 38 miles long and 27 wide. Chiefly a mountainous district, and originally covered with dense forests, whence the name, which signifies "bushy."

BADENWEILER, a village of Baden, near Mülheim, celebrated for its alkaline thermal springs and baths. Very perfect remains of Roman baths are to be seen in the vicinity.

BADGER (*meles*, Cuv.), a carnivorous plantigrade quadruped of the order mammalia. The badger was originally classified with the bears, raccoons, and coatis by Linnaeus, but has been, by more recent naturalists, very properly erected into a distinct order. There is nothing particular in the incisors or canine teeth of the badgers, but they are distinguished by their grinders. They have 4 false molars in the upper, and 8 in the under jaw, 2 and 4 on each side, respectively, followed by a carnassier and a single tuberculous tooth, of large size. The whole system is better adapted for grinding and bruising vegetables than for cutting and tearing flesh; and, consequently, the badgers are the least carnivorous of the family to which they belong, with the single exception of the bears. The principal character of the feet of the badger consists in their having 5 toes, before and behind, deeply buried in the flesh, and provided with powerful, compressed claws, adapted for burrowing in the earth, or digging for roots, which are their principal food. The body is long, flat, and compressed; the head small and flat, with an elongated snout; the legs sturdy and powerful; the tail short. Below the anus there is a slit, from which exudes a very fœtid, oleaginous matter, similar in character, though not in odor, to that of the civets and genets. The badgers are inoffensive, timid, nocturnal animals, sleeping during the day in their burrows, which are curiously constructed, with a single entrance, but with many different chambers within, terminating in a circular apartment, well lined with

dry grass or hay, in which the badger dwells alone, eschewing the company even of his female. The badger is a very cleanly animal, carefully removing every thing that might become offensive from his dwelling, never depositing his excrements near its entrance, and instantly evacuating it, in case of its being polluted by any other animal. The badgers have been accused of destroying young lambs, hares, and game of various kinds; but the charge can hardly be substantiated against them, as it is notorious that they prefer roots and fallen fruits to any other diet; although it must not be denied, that if a nest full of tempting eggs, whether of the domestic poultry, or of any species of wild fowl, were to attract the attention of a prowling badger, the contents would probably fare but badly. The flesh of the badger is, in some places, much esteemed as an article of food, and, as the animal passes the greater portion of its time sleeping warmly in its comfortable burrow, it is usually very fat. Although it is as peaceful and inoffensive an animal as any that exists, it makes a vigorous defence when attacked; and, as its bite is terrible, it requires a brave and powerful terrier dog to drag it from its burrow. This circumstance has led to much cruelty among the lower orders of England, with whom badger baiting was a favorite amusement, and too often carried on with aggravating circumstances of the most fiendish atrocity, until prohibited by act of parliament, like the other bloody barbarities, falsely called sports, of the last, and the earlier portion of the present, century.—The geographical distribution of the badger extends over the whole of Europe, northern and central Asia, and the northern parts of North America. It does not extend into Africa or South America; in the former of which continents it is represented by the rattel (*gulo mellivora*), as it is in the latter by the various kinds of mofette (*mephitis*). In Australia, that region of anomalous zoology, there exists no plantigrade animal of any kind. In the eastern peninsula and the Indian isles, the place of the badger is supplied by the telagon (*mydaus melicepe*). This genus contains but few species, at the most only 3, although some writers have reduced it to a single one, asserting the American badger to be a mere variety of the European, and the Indian badger to be a distinct genus, for neither of which opinions does there appear to be any foundation; least of all for that which would distinguish the Indian badger, when it is, in truth, wholly indistinguishable, its dental system and other characteristics being, in no discoverable sense, different from those of the common badger. Sir John Richardson has clearly shown, also, that the American badger is entitled to be held a distinct species of the same genus. The 3 species of the badger are: 1. The common badger of Europe (*M. vulgaris*). It is about the size of a moderately large dog, but longer, and fatter in the body, and lower on the legs. The head is long and

pointed, the ears so short as to be concealed by the fur. The tail barely reaches to the mid-thigh. The fur, or hair rather, of the animal is so long as to trail on the ground as it walks. The head is white, with a black chin and 3 black bands, passing backward from the corners of the mouth, including the ears and eyes, and meeting at the nape. Every hair of the upper part of the badger has 3 distinct colors, yellowish white at the roots, black at the middle, and ash-gray at the top, which gives a uniform sandy gray color to all its upper parts. The throat, breast, belly, and limbs, are jet black. The female badger produces 3, 4, or 5 young in the early spring, suckles them for about 6 weeks, and then gradually accustoms them to shift for themselves. When taken early, the young cubs are easily domesticated, become as playful as puppies, and soon evince great affection for their master. The old continue indolent to the last, and are not to be affected by the kindest treatment. Badgers are hunted, in some parts of England, by moonlight, when they go abroad in search of food, principally for their hides, which, when properly dressed, are held to make the best pistol furniture. Their hair is of great value for shaving brushes, and for paint brushes, to soften the nicer shades of oil pictures. The hind-quarters, when salted, are good eating, but are not much in use in England. In China, where "rats and mice and such small deer" are all in request for the table, badgers' hams are a choice dainty. 2. The American badger (*M. Labradorica*) measures about 2½ feet from the snout to the origin of the tail, which extends to 6 inches more. Its head is less attenuated than that of the European species, though equally elongated. The claws of its fore feet are much longer; its tail is shorter, its fur of a much softer and more silky character, and its colors different. It frequents the sandy plains skirting the foot of the Rocky mountains, so far north as the Peace river and the sources of the river of the mountains, and abounds in the country watered by the Missouri, but its southern and western limits have not been defined. It burrows to such an extent, in the sandy plains which it inhabits, as renders it dangerous to ride across them, especially when covered with snow. The American badger is a far more decidedly carnivorous animal than his European congener, and is also believed to hibernates during the winter months, which habit is not common to either of the other species. It preys on the marmots of the plains, the *ardamps Hoodii* and *Richardsonii*, as also on all the smaller quadrupeds, as field mice and the like, but also feeds on vegetable matters. It is known to extend into Mexico, where it is called *Ilacoyotl* or *Coyotlhumuli*; and very fine specimens have been sent from California. 3. The Indian badger (*M. collaris*) is about the size of the common badger, but stands much higher on its legs, and is distinguished by its attenuated muzzle, its truncated snout, resem-

bling that of a hog, and its slender, naked tail. Its body, in form, somewhat resembles that of the bear; and when attacked it sits erect, like that animal, and seems to possess a similar power with it, in its arms and claws, which are truly formidable. In color and the nature of its fur, it closely resembles the European species. The markings of the head are exactly similar to that of the English badger, but its throat is white, and the black bands from the muzzle to the ear, instead of meeting at the nape, encircle the white of the throat forming a distinct gorget.

BADGER, GEORGE E., an American statesman, born at Newbern, N. C., in 1795, graduated at Yale college, and commenced the practice of law at Raleigh, where he early became distinguished for solidity and strength in his profession. He was elected to the legislature of his native state in 1816, and served as judge from 1820 to 1825. In 1841 he became secretary of the navy in the cabinet of Pres. Harrison, but went out of office on the veto of the 2d bank bill by Pres. Tyler. In 1846 he was elected to the U. S. senate, to fill a vacancy, and in 1848 he was reelected to the same body for a full term. In 1853 he was nominated by Pres. Fillmore as a judge of the U. S. supreme court, but the senate did not confirm the nomination.

BADGER, JOSEPH, an American clergyman, and one of the earliest missionaries to the country north-west of the Ohio river, born Feb. 28, 1757, at Wilbraham, Mass., died May 5, 1846. He received his early instruction chiefly from his parents, and at the age of 18 joined the revolutionary army. He remained in service for 4 years, and then having saved a small sum of money, determined to obtain an education and engage in the Christian ministry. He paid his expenses at first by manual labor, but having entered Yale college in 1781, he maintained himself and his scholarship by alternately studying and teaching. He remained a few years in Connecticut after going through a course of professional study, and in 1800 was selected by the missionary society of that state to visit the unsettled parts of Ohio. He was probably the most tolling and patient pioneer in that savage country. To pass from settlement to settlement, often more than a day's journey apart, through a country where there were no roads, and across rivers without bridges, and to tie himself up into trees by night that he might sleep and not fall a prey to bears—such was his mode of life for above 30 years. During the war of 1812, he was appointed by Gen. Harrison chaplain to the army in that district, and his knowledge of the country was of great service to that commander-in-chief;—but he resumed his missionary functions at the close of the war, and continued them till 1835, when he retired and lived with his only daughter. He was cherished as a friend by Gen. Harrison, and during the latter years of his life received a pension from the United States.

BADIA Y LEBLICH, DOMINGO, a famous oriental traveller, better known as **ALI BEY**, was born at Biscay, in Spain, in 1770, died at Aleppo in 1819. He made himself familiar with the Arabic language, and with oriental manners, with a view to travelling in the East; and being employed as a political agent of the French government in that region, underwent circumcision, and in the disguise of a Mussulman visited Egypt, Arabia, and Syria. His travels, under the title of *Voyage d'Ali Bey en Asie et en Afrique*, appeared in 1814, and have been translated into English.

BADIUS, JONOCUS or **JOSSE**, sometimes called **ASCENSIVS**, from his birth-place, the village of Asche, near Brussels, an eminent printer at Paris, also the author of a life of Thomas à Kempis, a satire on the follies of women, entitled *Navicula Stultarum Mulierum*, and other works. He was born in 1462, and died in 1535. His printing house was famous under the name of *Prelum Ascensianum*. The notes to several classic authors whose works he printed, were furnished by himself.

BADONG, a principality of the island of Bali, comprising the southern peninsula, known on Dutch charts as *Tafel Hoek*, and the small island *Pulo Serangan*; population in 1845, 180,000. Its chief ports are *Tuban* and *Pantie Timor*. It has considerable trade in rice, bullocks, tallow, sapan-wood, and safflower, with Australia, Mauritius, Singapore, and China. Large numbers of American whalers resort to it for supplies; as many as 17 have been seen in *Pantie Timor* at one time. *Mt. Agung*, 12,875 feet high, is in this province. The capital is also called *Badong*.

BADOOR, or **BRUGWAR**, the chief river of *Beloochistan*. After passing out of that country, it assumes the name of *Dooster*, and taking a S. W. course, empties itself into the Arabian sea in lat. 25° 15' N., long. 61° 50' E.

BAENA, a town of Spain, in the province of Cordova, 24 miles S. E. of Cordova, on the *Marbello*. Pop. 12,944. Grain and oil are the chief articles of trade, and are exported to *Malaga*. The site of the old Roman town (*Baniana*) is still distinguishable.

BAER, KARL ERNST VON, a Russian naturalist, born in Esthonia, Feb. 17, 1792. He availed himself of the teachers and opportunities which his country offered in the study of the natural sciences, especially of botany, and in 1818 went to Germany, where he pursued most diligently the study of comparative anatomy. In 1819, he became professor of zoology in the university of Königsberg, and founded the zoological museum in that town. In 1837, he repaired to St. Petersburg, became interested in the polar regions, and undertook a journey of investigation to the north. He succeeded in ascending but little beyond Archangel, but left valuable descriptions of the plants and animals of the regions through which he passed. The writings of Baer are distinguished for their philosophical depth, and also

have the merit of making scientific topics intelligible and interesting to the people.

BAERLE, **GASPARD VAN**, more known under the Latin name of **BARLÆUS**, a Dutch poet, theologian, and historian, born at Antwerp, Feb. 12, 1584, died at Amsterdam, Jan. 14, 1648. While very young he was taken by his father, who was exiled for his religious opinions, to Holland, and there devoted himself with much success to his studies, began to preach at an early age, and shortly after was elected professor of logic in the university of Leyden. He adopted the principles and wrote in defence of Arminius and the Remonstrants, for which he incurred violent persecution by the Gomarists, and was at length deprived of his professorship. He now studied medicine for a time, but remained at Leyden, supporting himself by giving private instruction, till 1681, when he was elected professor of philosophy and eloquence in the newly founded Athenæum at Amsterdam, a position which he retained till his death. He was associated with the most distinguished men of his time, was one of the best Latin poets of his century, and has left valuable records of the government of Count Maurice of Nassau in Brazil, and of the brilliant reception given to Maria de' Medici at Amsterdam in 1638. His studies were excessive, and caused insanity some time before his death.

BAETYLIA, sacred stones, worshipped by several oriental nations, and known also among the Greeks and Romans. They were generally black, and esteemed to have fallen from heaven, to be alive, and to utter oracles. The name has been derived by some writers from the Hebrew name of the stone on which Jacob reclined when he dreamed of the ladder, and by others from the Greek name of the stone which Rhea gave to Saturn instead of the new-born Zeus. Small stones consecrated to some god, as Saturn or Jupiter, were often worn as amulets. The Romans sent a deputation to Phrygia for one of these stones, and received it with important religious ceremonies.

BAEZ, **BUENAVENTURA**, the rival of Santana for the presidency of the Dominican republic, born about 1810 at Azua, a town on the Bia, in the island of Hayti. From his earliest days he took a deep interest in the public affairs of his country. Many circumstances combined to give him a position of prominence in the island. His father was a man of marked ability, and noted for the active part which he played in the insurrection of 1808. He was wealthy, and provided his children with good educational advantages. Thus among the 5 brothers of Buenaventura, who are all zealously devoted to his political fortunes, 2 were educated at Paris. Buenaventura himself gained influence in the island, not only by his talent for political engineering, but still more by the fact of his being one of the richest landholders of Hayti. For many years he was a friend, and acted as assistant of Gen. Santana, and in 1849, when the

latter declined the presidency, it was offered to Baez, who, from having for many years past cooperated with the liberator in organizing and developing the government and the prosperity of the new-fledged republic, seemed, next to him, the most eligible man. Baez filled the presidential chair from 1849 to 1853; but soon after his accession to power, it became evident that the good understanding which previously marked the intercourse of the two public men had ceased to exist, and the feelings of animosity and rivalry which sprung up between them, increasing in intensity as time rolled on, have since produced a most deplorable effect upon the progress of the young republic. In 1853, when Santana again became president of Dominica, his first exercise of authority was to banish his predecessor from the island. Baez betook himself to New York, but although in exile, he availed himself of every opportunity to thwart the policy of the government of Dominica. Finally, in 1857, at the expiration of Santana's lease of office, he was called upon to reassume the reins of power, but only for a short time. According to the last accounts (Feb. 1858), Santana's star was again rising, and Baez had been compelled to resort to flight.

BAEZA (anciently **BAETIA**), a city of Spain, in the province of Jaen, 8 miles from the Guadalquivir; pop. 10,851. It has a cathedral and several fine public edifices, of which the most noteworthy are the university, the oratory of St. Philip Neri, the marble fountain in the plaza, and the arch of Baeza. In the days when it was held by the Moors, it had a population of 50,000, and was surrounded by a strong double wall. The sculptor, Gaspar Becerra, was born here in 1520. The trade and manufactures of the place are inconsiderable.

BAFFIN, **WILLIAM**, an English navigator, born in 1584, died in 1622. In 1612 he accompanied James Hall on that Arctic expedition which proved so fatal to him, and on his return wrote an account of it, in which a method is laid down for the first time of determining the longitude at sea by an observation of the celestial bodies. In 1615, Baffin was appointed mate to Robert Bylot, who was about to undertake a 4th voyage toward the northwest in the *Discovery*. In the following year he again sailed with Bylot in the same vessel, and on this occasion discovered the bay on the American coast which has been since called after him. Baffin published an account of both voyages, but in consequence of his maps and tables not having been given with the narrative, because of their complexity and costliness, his description of the bay does not appear so accurate and intelligible as it otherwise would. Baffin made other voyages beside the above, but they were not of much importance. He was killed at the siege of Ormuz, in the Persian gulf, while attempting, in conjunction with a Persian force, to expel the Portuguese from that island.

BAFFIN'S, or **BYLOT'S BAY**, an extensive gulf or inland sea on the north-eastern coast of North America, communicating with the Atlantic by Davis strait. It extends about 950 miles from south-east to north-west, and has an average width of 280 miles. It was named in honor of William Baffin, an English navigator who first explored it in company with Captain Bylot in 1616. It was visited by Captain Ross in 1818, by Captain Parry in 1819, by Inglefield in 1852, who established the existence of a channel connecting it with the great Polar sea, and by McClure, in 1850-'3, who was the first to sail from Behring strait to Baffin's bay. The coasts are rocky and precipitous, rising in many places to the height of 1,000 feet, and presenting a vast number of lofty peaks, so singular in shape that the beholder can scarcely believe them the unaided work of nature. Innumerable sounds and creeks, most of which have yet to be explored, open on each side of the bay. Black whales, of large size, and seals, are captured here by British vessels. The depth of the water is often great, but very unequal. As far as ascertained, it varies from 200 to 1,050 fathoms.

BAFFO, **BAFFO THE PURE**, as she was called, a Venetian woman of remarkable talent and beauty, who was captured, in 1580, by corsairs, while on the way with her father from Venice to Corfu, and brought to Constantinople, where she became the slave and afterward the sultana of Amurath III., over whom she exercised extraordinary influence, which his mother attributed to sorcery. To sift the matter, Amurath went so far as to subject the female attendants of Baffo to the torture, in order to extract from them the alleged secret of her fascination. But as the poor women could confess nothing, the legitimacy of the sultana's influence was no longer questioned. After the death of the sultan, she became the adviser of her son, Mohammed III., and her influence did not wane until 1603, when her grandson Achmet consigned her to the old seraglio, where she died neglected the same year.

BAGAGEN, a river in the province of Goyaz, Brazil, rises in the Serra Viadeira, and falls into the Maranhão about 20 miles above where that river joins with the Tocantins. Length 160 miles.

BAGAUDÆ, or **BAGAUDI**, a body of rural Gallic insurrectionists, who revolted about A. D. 270, headed by one Victoria, called by the soldiers Mother of Legions. They besieged and took Autun. Claudius temporarily quelled them, and Aurelian by a remission of their taxes in arrears, and by granting them a general amnesty, made peace with them. Under Diocletian, A. D. 280, they rose again, and massacred their masters, ravaged and desolated with fire and sword multitudes of cities and villages. Diocletian, himself engaged in putting down the Persians and barbarians of the lower Danube, sent Maximian against the Bagaudæ, who rallied under 2 Christian leaders, *Elilianus* and

Amandus, who assumed the title of emperor. The coins of these Bagaudæan emperors are still extant. Maximian prosecuted his warlike operations with so much vigor, that although the Bagaudæ were superior in numbers, they were soon compelled to capitulate, though not until they had retreated to an island formed by the confluence of the Marne and Seine, and made a desperate stand for the victory. The 2 emperors died in battle. The place of this sanguinary contest was long known as the *Fosses des Bagaudes*. From this period, the Bagaudæ may be considered as gradually transforming their activity into a kind of brigandage, which infested the forests and fastnesses of Gaul until the end of the western empire. Under Carinus, the oppressions were renewed, and the accession of Diocletian furnished the occasion for the second insurrection of the Bagaudæ, of which an account has already been given above.

BAGDAD, a city and pashalic of modern Turkey. The city is situated on the Tigris, which is here about 700 feet wide. Lat. 33° 20' N., long. 44° 24' E.; pop. about 50,000, which was considerably larger until the great flood and the plague of 1831. The city was founded A. D. 762, by the Caliph Al Mansoor, and became the favorite residence of the Abbasside caliphs. The great Haroun al Rashid enlarged and beautified it, and his fame and that of his son made it a centre of civilization and refinement, and the chosen seat of Arabic science and literature. In 1258, it fell under the conquering arms of Hulaku; from which time it changed rulers several times, until Amurath IV., who reduced it permanently under Turkish dominion. As a frontier city of the empire, it has experienced the vicissitudes of war in the constant quarrels between the Turks and Persians. A government similar to that of the Egyptian Mamelukes was established for nearly a century, owing a nominal allegiance only to the sultan, but in 1831, Sultan Mohammed put an end to it, and after a siege of three months, he took the city, and restored the right of the Sublime Porte to appoint the pashas of the province. The commercial importance of Bagdad has fallen to a very low ebb. The insecurity of the traffic from the constant brigandage of the Bedouins, which the governors are not strong enough to put down, and the decay of the city itself, are the chief causes. The manufactures are few, leather is perhaps the most important.—The pashalic of Bagdad is one of the most important in the Turkish empire. On the energy and abilities of the pasha of this province depends the conservation of the frontier against the Persians. It contains an area of about 100,000 sq. m., comprehending parts of Koordistan and Khuisistan, the provinces of Aljesiras and Irak Arabi. It is nearly coextensive with Mesopotamia, with Assyria proper, Babylonia, and Chaldea. It is traversed by the great rivers Euphrates and Tigris, with their tributaries, the great and little Zab (Zabatas and Caprus), the DIALA (Delas), and the Mendeli, and beside the principal cities

of Mosul and Bagdad, it contains the ruins of Seleucia and Otesiphon, of Babylon and Nineveh. Once by the untiring labor of man and by a perfect system of irrigation, the soil was the garden of the world. The neglect of centuries has converted its teeming plains into deserts and marshes inhabited by a scanty population, not equal to that of the smallest of its ancient cities.

BAGE, ROBERT, English novelist, born at Derby in 1728, died in Tamworth, 1801. He was a paper-maker, in which trade he continued for the greater part of his life. His principal works are "Mount Kenneth," "Bartram Downs," and the "Fair Syrian." Sir Walter Scott recommended that he should be included in Ballantyne's "Novelist's Library," and even wrote his life for that work, out of the scantiest materials.

BAGENBUN HEAD, a cape at the entrance of Bannow bay, county of Wexford, Ireland, noted as the spot where Earl Strongbow landed in 1170.

BAGFORD, JOHN, an English antiquary, born in London, 1651, where he died, May 15, 1716. In the early part of his life he supported himself as a shoemaker, but subsequently he conceived a taste for antiquarian researches, and succeeded in collecting many valuable old books, &c., for the bishop of Ely's library, and in accumulating a vast number of antiquities, which were afterward purchased for that of the earl of Oxford. By the kindness of his patron, the bishop of Ely, he was admitted into the charterhouse, where he was buried.

BAGGAGE, is the term used in our language for those necessities of an army, such as tents, clothing, and the like, which are carried on carts, pack-horses, or mules. In the last century the officers' baggage became a formidable encumbrance to the movements of the army. The baggage which Louis XV. carried with him in his campaign in the Netherlands was unprecedented. Among other things there was a perfect stage apparatus for the exhibition of court theatricals. Every high officer brought his mistress along with him, who, of course, needed a large establishment of her own. This was the culmination of the baggage era in the history of expeditionary organization. Napoleon would never allow any thing superfluous in the matter of baggage. In the movements of the French army in the late campaigns on the shores of the Black sea, the tents were so ingeniously constructed that they could be pulled to pieces and distributed in the knapsacks of 4 or 6 men on march. This was the first occasion in which tents were separated from the baggage of the army and carried about as part of the personal equipment.—In America the trunks, carpet-bags, and bandboxes of travellers, are called baggage.

BAGGE, JOHAN, a Swedish admiral of the 16th century, who rendered various eminent services to his country, especially in 1555, when he expelled the Russian invaders from Finland—an achievement which paved the way for a

treaty of 40 years peace between the 2 countries. He increased his fame by successful expeditions against the Hanse towns, and against Denmark, but was doomed to perish in the dungeons of his Danish enemies, who had captured him in 1564.

BAGGER. I. JOHANN, a Danish prelate and oriental scholar, born at the village of Lunden, in Holstein, in 1646, died at Copenhagen in 1693. After he was made bishop of the Lutheran congregation of Copenhagen he became a bitter opponent of the Calvinists, with whose political opinions he had no sympathy. This led him, in 1684, to dissuade the Danish government from granting an asylum to the French Huguenots. II. CARL CHRISTIAN, a Danish poet, born May 10, 1807, died Oct. 25, 1846. He wrote a tragedy, a small collection of poetry, a fairy tale in verse, and a tale entitled *Min Broders Levet*, or "My Brother's Life." A German translation of this story appeared in 1835 at Leipzig. He was poor, proud, and sensitive, and adverse criticism preyed upon his mind and accelerated his death.

BAGGESEN, JENS or IMMANUEL, a Danish and German poet, born at Corsør, in Seeland, Feb. 15, 1764, died in Hamburg, Oct. 3, 1834. While travelling abroad he married a granddaughter of the celebrated Haller, and became personally acquainted with many of the eminent men of Germany. At the same time he was brought into contact with the stormy events which swept over France toward the close of the last century. The most remarkable of his writings is his *Labyrinthen*, a species of autobiography (in Danish), in which he gives graphic descriptions of his adventurous life. He wrote many lyrical poems in German—a language which he handled with the same facility as his native tongue. A collection of these appeared at Hamburg in 1803, and at Amsterdam in 1806. His best German work is his poem, *Parthenais*, of which a French translation appeared in 1810. He endeavored for some time to imitate Klopstock, in his lofty, and Wieland, in his humorous conceptions, and afterward he turned satirist for the purpose of opposing the mysticism of Fichte and Schelling. A new edition of his Danish writings appeared in 1845, in 12 vols., at Copenhagen.

BAGLEN, or BAGALKEN, a Dutch possession on the island of Java, near the centre. It is volcanic, but very fertile, and produces rice and sugar in abundance. Pop. 80,000; capital, Porworedjo.

BAGLIONE, GIOVANNI, an Italian painter, born in Rome in the latter part of the 16th, died in the middle of the 17th, century. He was more distinguished for industry than for genius, although he excelled in some measure in colors, and in light and shade. He was patronized by the popes Sixtus V. and Paul V., appointed president of the academy of St. Luke, and his popularity was great throughout the whole of his career. He produced a great number of paintings, the best of which is his

picture in St. Peter's of that saint raising Tabitha from the dead. He became the biographer of the artists who flourished at Rome from 1572 to 1642, in which there are not less than 81 memoirs. A new edition of this work appeared in Naples in 1738, with the addition of the lives of Baglione and of Salvator Rosa.

BAGLIONI, the name of a historical family of Perugia in Italy, under the nominal protection, first of the emperor, and afterward of the popes. Perugia contained 2 parties—an aristocratic and a democratic one. The Baglioni belonged to the former.—In the 12th century LUDOVICO BAGLIONI was appointed imperial vicar of Perugia by Frederic Barbarossa, who styles Baglioni his relative, as coming, like himself, from the ducal house of Swabia. In 1393, 70 Perugian gentlemen, and among them 2 Baglionis, were killed in a street fight by the populace; the whole aristocratic party was expelled from the city.—BRACCIO BAGLIONI, in the service of the pope, defeated Francesco Sforza near Lodi, in 1453, and was made lord of Spello by Sixtus IV.—GIAN PAOLO BAGLIONI began life as a condottiere; then availing himself of the dissensions of his native state he obtained supreme power over it, and made alliance with Pandolfo Petrucci, ruler of Sienna. He was driven out of Perugia by Cæsar Borgia in 1502. Returning in 1508, after the death of Alexander VI., he was banished again, in 1506, by Julius II. He then entered the service of the Venetians in the war of the league of Cambray. He resumed his old position as ruler of Perugia in 1518. Here he created so much scandal that Leo X., who had at first winked at his usurpation, summoned him to Rome, threw him into the castle of St. Angelo, had him tried, and beheaded at Rome in 1520.—MALATESTA and ORAZIO, his sons, recovered possession of Perugia after the death of Leo. Orazio turned condottiere in the service of France, and was killed in the Neapolitan expedition, 1528. Malatesta remained in Perugia until 1529, when he was driven out by the papal and imperial troops. He died at Perugia in Dec. 1531.—In the 16th century ASTORRE BAGLIONI served Charles V. in Italy and on the coast of Tunis, and rose high in the favor of Pope Paul III., who restored to him his paternal estates. He then entered into the Venetian service, and was governor of Famagosta in Cyprus, when the Turks besieged it in 1570. After a brave defence he was obliged to capitulate, on condition of being sent home to Venice with his garrison. But Mustapha Pasha, disregarding the terms, caused Baglioni and the other Venetian officers to be beheaded.

BAGLIVI, GEORGIO, an eminent Italian physician, born at Ragusa in Sept. 1668, died in March, 1707. He was professor of medicine and anatomy at Rome. He was a most laborious student and an eloquent teacher. He declared against systems and theories, and in favor of unprejudiced observation. However, he founded the system of solidism in opposition to the previous notion that the fluids of the body

are first attacked by disease. He was opposed to much giving of drugs. He died from the fatigue of excessive labor, leaving many treatises, frequently republished under the title of *Opera Omnia Medico-Practica*.

BAGMUTTY, a river of Nepaul, which, after a course of 285 miles, flows into the Ganges, near the town of Monghyr.

BAGNACAVALLLO, an Italian painter, whose real name was Bartolommeo Ramenghi, but who was called occasionally *Il Bologna*, and generally Bagnacavallo, after the name of the small village near Bologna where he was born, in 1484. He died at Bologna in 1542. He was a pupil of Raphael. He was looked upon by his contemporaries as the first artist of the Bolognese school, and this verdict is confirmed by posterity.

BAGNERES-DE-BIGORRE, a town of France, department of Hautes Pyrénées, on the left bank of the Adour, at the entrance of the valley of Campan. Its hot mineral springs, which were resorted to by the Romans, have given the place celebrity and importance. During the summer and autumn it is crowded with invalids and pleasure-hunters from most parts of France, and even Europe. Pop. 8,448.

BAGNERES-DE-LUCHON, a watering-place in France, department of Haute Garonne, situated in the beautiful valley from which it derives its surname, at the foot of the Pyrénées, within about 5 miles of the Spanish frontier. It has 9 mineral springs. The permanent population is nearly 8,000, but in winter the climate is so severe that the town is deserted, not only by strangers, but even by a portion of its wealthy inhabitants. Copper-mines and slate-quarries are found in the neighborhood.

BAGNES-LE-CHABLE, a parish and village of Switzerland (pop. 9,000), in the valley of Bagnes, on the Dranse. The Val-de-Bagnes was twice inundated during the 16th century. In 1818 the Dranse, having been blocked up by the ice, expanded into a lake half a league in length, which, after a time, burst its barriers and poured down upon the village; 400 cottages were carried away and 84 lives lost.

BAGNIO, a word derived from the Italian *bagno*, which means a bath or a bathing-house. The criminals of Constantinople were formerly confined in some abandoned bath-houses, or, as the Italians would call them, bagnos. Hence, bagnio has become a generic term in the Levant for places where criminals or slaves are confined. Bagnios exist in Algiers, Barbary, and all along the northern coast of Africa. In France the word *bagne* has been used for a prison-house where public works are carried on. See GAL-LEYS.

BAGNOLES, a hamlet of France, in the department of Orne, in a solitary valley 13 miles S. S. E. from Domfront. This village, celebrated for its baths and mineral springs, was built in the 17th century, but has been lately much improved and adorned with fine buildings and promenades. A military hospital was

erected here in 1822, capable of accommodating 200 invalids.

BAGOAS, a Persian word signifying eunuch, the name of a soldier of Egyptian birth, who lived in the 4th century B. C., and is said to have aided Artaxerxes Ochus in conquering Egypt. The story runs that Bagoas was so much disgusted by the sacrifice of the king to the deified animals of Egypt, especially to the bull Apis, whom he caused to be killed and eaten, that, after his return to Persia, he poisoned him, gave his flesh to be eaten by cats—another sacred Egyptian animal—and had sabre-hilts made of his bones. He then raised Arses, the youngest son of Artaxerxes, to the throne, having murdered all the others; but soon becoming offended with this new king also, he destroyed him likewise, and placed Darius Codomannus on the perilous throne in his stead. He afterward attempted to poison Darius, but was detected and poisoned himself. It was Bagoas who led the troops of Artaxerxes Ochus to Judæa, seized the temple, and compelled every Jew to pay a tribute of 50 drachmas for each lamb sacrificed.

BAGOT, SIR CHARLES, a British diplomatist, born Sept. 28, 1781, died at Kingston in Canada, May 18, 1848. He was the second son of William, first Lord Bagot. In 1807 he was appointed under-secretary of state for foreign affairs in the Canning administration; in 1814, minister to France; in 1820, ambassador at St. Petersburg; and, in 1824, ambassador in Holland. On the death of Lord Sydenham he was made governor-general of the Canadas, which office he held till his demise.—**BAGOT, RICHARD**, an English bishop, brother of the preceding, born Nov. 22, 1782, died May 15, 1854. In 1829 he was made bishop of Oxford, and in 1845 he was promoted to the bishopric of Bath and Wells. During the Tractarian controversy he was violently assailed for his Puseyite predilections, and for his induction of the Rev. M. Bennett into the living of Frome. This had such an effect on Bishop Bagot that his intellect became disturbed, and for some years before his death the affairs of his diocese had to be administered by the bishop of Gloucester and Bristol.

BAGPIPE, a wind instrument of great antiquity, which seems to have been a favorite with many nations of Europe in the dawn of musical taste, but is so identified at the present day with the Scotch highlanders as to be considered almost peculiar to them. Its invention is traced back to the mythical age of Greece, and is ascribed to one of the pastoral deities, while among the Romans the instrument, almost identical in form with that now in use, was familiarly known as the *tibia utricularis*. It was also known to many of the Scandinavian tribes, and was probably introduced into Ireland and Scotland by the Danes and Norwegians at a very early period. At the present day it is still a favorite with the peasantry of Italy, Spain, and other parts of Europe. The instrument is singularly uncouth in shape, and its tones, though stirring, are sharp and piercing.

It consists of a leather bag, inflated through a valved tube by the mouth or a bellows, connected with which is a flute part called the chanter, perforated with holes, and furnished with a reed, the action of the air from the bellows upon which produces the music. Three pipes or drones, two of which are in unison with D on the chanter, while the third, or great drone, is an octave lower, complete the instrument. The rude construction and limited compass of the bagpipe render it available for the performance only of tunes consisting of a few notes, and all set on the same key. As it is ignored by educated musicians, we find but little music written for it, and the pipers play almost entirely by ear. Among the highlanders of Scotland the term *pibroch*, sometimes erroneously used for the instrument itself, is employed to denote all the music which it produces, comprising chiefly battle pieces, marches, lamentations, and compositions generally of an animated character. The highland regiments in the British service are always accompanied by their pipers, whose harsh and discordant performance of their national airs produces an extraordinary effect upon the soldiers. It is said that schools exist in some of the Scottish islands for instruction on the bagpipe, and the Highland society of Edinburgh offer annual premiums for the sake of encouraging the art.

BAGRADAS. See MEYERDA.

BAGRADITES, a royal family of Georgia and Armenia. The founder of this family was Bagrad or Bagarat, and was allowed by the first king of Armenia, of Parthian race, Walarshag (149–127 B. C.), the privilege of putting the crown upon the head of the Armenian monarchs. With Tiridates the Great (about 298) the Bagrad family went over to Christianity, and in the 5th and 6th centuries resisted the efforts of the Neo-Persians to bring the Armenians back to the doctrine of Zoroaster. The Byzantine emperors and afterward the caliphs of Bagrad conferred the dignity of governor of Armenia upon several members of the Bagradite race. The Bagradite Aschot first assumed the title of shah-in-shah or prince of princes, and in 885 the kingly crown, on the condition of rendering a small tribute. This dynasty reigned in Armenia from 885 to 1045, frequently sharing the supremacy with the Ardrunian family of princes. In the 8th century a younger son of a Bagradite, one Wasag, became king of Georgia; from him the Georgian Bagradites deduce themselves. The celebrated Russian Bagration comes from the Georgian branch of this historical family.

BAGRATON, PETER, prince, a Russian general, of the Georgian Bagradite family, born about the year 1762, died Oct. 7, 1812. He entered the Russian army in 1782 as a common soldier; and in a long military career he rose to the highest grades, and gained a place among those Russian generals the most celebrated for their stubborn, unyielding bravery. He first served in the wars against the mountaineers of the Caucasus;

next he was employed under Suwaroff in 1788; having been made a colonel he took part in the storming of Otchakoff, and in 1794 fought against the Poles. He also served under Suwaroff against the French in Italy, struggling with success against Moreau and Serrurier. He commanded the vanguard at the bloody battle of the Trebia, and distinguished himself at Genoa and in Switzerland. In 1805, under Kutusoff, he commanded the vanguard in the Austro-Russian campaign; at Znaym he successfully resisted Murat and Lannes, whose forces outnumbered his. Having been created a lieutenant-general, he commanded the vanguard of the Austrian army at Ansterlitz, under Prince Lichtenstein. In the Prussian campaign of 1807, his resistance made the battle of Eylau so terrible that even Napoleon shuddered at its bloody results. The same is said of him at the battle of Friedland. In 1808 he overran Finland, Western Bothnia, and the Aland isles; in 1809 he fought at Silistria, and destroyed the Turkish force brought up from Adrianople to relieve that fortress. In 1812 he fought an unsuccessful battle with Davoust at Mohileff, but succeeded, nevertheless, in joining the Russian main army. He was mortally wounded at the terrible battle of Mojaisk or Borodino, Sept. 7, 1812, just a month before he died. He married in 1810 a lady of great beauty and wealth from the house of Skawronsky, to which Catharine I., wife of Peter the Great, belonged. At the congress of Vienna she was one of the leaders of fashion and of gallantry. She subsequently lived in Paris, where her house was remarkable for splendor, elegance, and luxury. In Jan. 1830 she married secretly Col. Oaradoc, then celebrated for his beauty and extravagance, but now known as Lord Howden, without, however, taking his name. Subsequently, however, the marriage was publicly acknowledged.

BAHAMAS, a chain of islands, belonging to Great Britain, extending from the N. coast of St. Domingo to the eastern coast of Florida, in a north-westerly direction, and lying between lat. 21° and 27° $30'$ N. and long. 70° $30'$ and 79° $5'$ W. They are about 500 in number, of which only 12 or 14 are inhabited, a great many of them being merely small rocky islets. Most of the islands of the group are situated on the Bahamas Banks. They are, as a general thing, very flat, long, and narrow, formed of calcareous rock, with a light, sandy soil; though without running streams, there are numerous springs, and the moisture thus obtained, enables them to produce fruit in abundance. Maize, yams, sweet potatoes, oranges, limes, lemons, &c., are among the products of the islands; there are also several valuable woods, as mahogany, fustic, lignum vitæ, &c.; in the more southerly islands are large salt-ponds, furnishing the most important of their exports. The climate is salubrious, and particularly well adapted to consumptive invalids. Nassau is much resorted to by vale-

tudinarians of this class, from the United States. St. Salvador, one of the Bahamas, was the first land discovered by Columbus in 1492. They were then inhabited by a gentle and inoffensive race of Indians, whom the Spaniards carried away and forced to labor in the mines of St. Domingo, and the pearl fisheries of Cumana. They thenceforth remained unoccupied until 1629, when the English settled them; they were dispossessed by the Spaniards, and the islands repeatedly changed masters, being finally annexed permanently to the British empire in 1783. At the close of the revolutionary war, many of the Tories settled here. The value of the sponge exported in 1851, was £14,000; of fruit, £12,600; and of salt, £16,500. The revenue for the year was £26,105; the expenditure, £25,068. The separation of the Turks islands, in 1848, considerably diminished the receipts of customs, they being the most productive of the salt islands. The number of vessels clearing from the several harbors of the group in 1851, was 373, registering 36,914 tons; while 363 entered, registering 36,088 tons. There are 9 custom-houses. The seat of government is Nassau, in the island of New Providence. There are 9 Episcopal churches, beside 21 chapels; a Presbyterian church; 1 Baptist, and 4 Methodist chapels. There are 21 public schools, attended by 1,857 pupils. The population of the islands, in 1852 was 28,092. The most important of them are Grand Bahama, Great and Little Abaco, Andros Islands, New Providence, Eleuthera, San Salvador, Rum Cay, Great Exuma, Watling Island, Long Island, Crooked Island, Atwood's Key, and Great and Little Inagua. Wrecking constitutes an important branch of industry. The wreckers are licensed by the government, for the double purpose of affording assistance to vessels in distress, and of saving life and property from those that are lost. They receive a percentage of the value of the property recovered, as salvage. The amount of the sale of property so preserved, was, in 1852, £46,515.

BAHAR, **BETHAR**, or **VIHAR**, an extensive province of British India, now a part of the presidency of Bengal; pop. about 12,000,000. It was ceded to the British by the Mogul shah Alum in 1765, on condition of an annual payment of 26 lacs of rupees. It is intersected by the Ganges, and produces much opium. Gaya, the birthplace of Buddha, and the scene of one of Vishnu's incarnations, is in the province, and is visited by vast numbers of pilgrims. The present capital is Patna, but there is a city of Bahar, a place of no importance now, although possibly once the capital of the province.

BAHARI (the sea country), the Arabic name of lower Egypt, or the region of the Delta of the Nile.

BAHAWALPOOR, a district of the Punjab, so called from Bahawal Khan, an Afghan chief, who had created an independent sovereignty here, of which his son was deprived by Runjeet Singh. The town of Bahawalpoor is on the

river Sutil, 62 miles south of the city of Mooltaun.

BAHIA, or **SÃO SALVADOR**, city and seaport of Brazil, capital of the province of the same name, beautifully situated on a strip of land, which forms the east side of the entrance to the Bahia de Todos-os-Santos, or All Saints' Bay, 800 miles N. N. E. of Rio Janeiro, in lat. 18° S., long $88^{\circ} 81'$ W. It is divided into 2 parts, the upper (*alta*) and lower (*baixa*). The latter consists of a narrow, badly paved, filthy street, about 4 miles long, which runs parallel to the shore. Here is transacted nearly all the business of the place; here are the custom-house, the public granary, the arsenal store-houses, and the ship-yard. The upper town stands at an elevation of several hundred feet above, and is reached by very steep and irregular streets. This is the larger, more populous, and finer portion of the city. It is ancient as well as curious in appearance, winding as it does irregularly along the summit of the hill. It is paved, to preserve the surface from the effects of heavy rains. On an abrupt promontory there is a wooded promenade (*passeio publico*), overlooking the entire city and bay; it has a heavy iron railing at its edge. Here is a marble monument which commemorates the landing of Don John VI. the first royal governor of Brazil. Bahia has many costly churches, and numerous monasteries and convents. It has also a medical school. The temperature ranges between 75° and 85° F. The harbor is one of the best and safest in America; it is defended by 7 forts. Bahia exports sugar, cotton, tobacco, and rum, and imports the relatively few slaves which escape the vigilance of British cruisers. Its commerce has greatly declined since the revolution of 1837. The value of imports into the province in 1846, was £1,481,548. Pop. about 120,000.—The province of Bahia extends between lat. $9^{\circ} 20'$ and $16^{\circ} 35'$ S., and long. $87^{\circ} 20'$ and $44^{\circ} 50'$ W.; area 222,168 sq. miles. It is crossed from N. to S. at 200 miles from the ocean, by a mountain range, which forms the watershed for the rivers flowing E. to the Atlantic, and those that flow to the Rio São Francisco. Branches of the range traverse the province in various directions. The principal agricultural staples are sugar, cotton, tobacco, coffee, mandiocca, rice, beans, and maize. Brazil wood of different kinds, cedar, gum elemi, copal, dragon's blood, jalap, ipecacuanha and saffron, are native products, and oranges, mangoes, and other fruits are abundant, and excellent. This province is divided into 13 districts, and has 14 deputies in the general assembly, and 7 senators. It has also its own provincial assembly. Pop. about 800,000.

BAHIA HONDA (Span. deep bay), an anchorage of Cuba on its north coast, 60 miles W. S. W. of Havana. Many slaves are illicitly landed there.

BAHR, **JOHANN CHRISTIAN FELLX**, a German philologist, born at Darmstadt, June 13, 1798, ed-

ucated at Heidelberg, published in 1838 a "History of Roman Literature," of which the 8d enlarged edition appeared in 1844-'45, Carlsruhe, 2 vols. He has also written a work on Herodotus in 4 vols., beside numerous treatises in various reviews and cyclopædias. He adheres to the symbolical theory of mythology and early history.

BAHRDT, **KARL FRIEDRICH**, one of the number of gifted, but irregular and restless men, bent on plans for reforming the world, whom Germany produced in the time of Rousseau, was born in Bischofswerda, Saxony, in 1741, son of a professor of theology at Leipsic, and became himself, by turns, professor of theology in Leipsic, Erfurt, and Giessen, preacher in Dürkheim, teacher in Heidesheim, professor in Halle, and tavern-keeper near that city, state prisoner in Magdeburg, and at last teacher and tavern-keeper in Halle, everywhere admired on account of his talents, and disliked on account of his bold criticisms and disorderly life. He is the author of several works on theology and politics, written in a critical spirit, of which the *Briefe über die Bibel im Volkston* (Letters on the Bible in a Popular Style) deserve mention, on account of their astonishing temporary success. He was the boldest German critic of the Bible in the last century, and the most frivolous. He remained a deist, but denied the immortality of the soul. He died in 1792, in a forlorn and indigent condition.

BAHR-EL-ABIAD. See **ABIAD**, **EL BARR**.

BAHREIN ISLAND. See **AVAI**.

BALÆ (**BAJA**), a seaport town and celebrated watering-place during the height of the Roman power, lying about 10 miles west of the modern city of Naples, on the bay of the same name, between the Lucrine lake and Cape Misenum, and opposite the town of Puteoli. The narrow strip of coast on which Bais stood was covered with the palaces and baths of the Roman nobles. For want of room they often built out into the sea, and remains of submarine foundations are still visible. The leading attractions of Bais seem to have been its mild climate, its situation protecting it from the north winds, and admitting the eastern breeze, coming across the bay, its numerous hot springs, the generally smooth unruffled state of the sea, and its delightful scenery. Julius Cæsar, Augustus, Tiberius, Caligula, Nero, and Caracalla, all frequented this spot. It retained its prosperity until the invasion of Theodor the Goth. With the fall of the empire, it ceased to be visited; its villas were left to decay, uninhabited, and the whole coast is now a desert. The springs, no longer confined, have formed stagnant pools, giving off unwholesome exhalations in summer. The ground is strewn with ruined fragments of bricks, marbles, and mosaics. The only buildings remaining are 3 or 4 edifices of a circular form, 2 of which were, in all probability, warm baths. One of them, however, standing near a

small projection of the shore, is believed to have been a temple of Vennu. It is of beautiful proportions, externally octagonal, but circular within, and about 90 feet in diameter. The whole coast has evidently undergone great changes since the time of the Romans, and appears to have sunk several feet below its ancient level.

BAIARDO, or **BAIRDI**, **OTTAVIO ANTONIO**, an Italian antiquary, born about 1690, died about 1765. He was appointed by Charles III., of Naples, to describe the ruins of Herculaneum, then recently exhumed. Baiardo was so long in writing the introduction, that the king took the work away, and intrusted it to a committee of savans.

BAIAS, **BAYAS**, **BYASS**, a town of Syria, 65 miles W. N. W. of Aleppo, situated where a small river (probably the ancient Issus) enters the gulf of Iskanderoon. It has a harbor for small craft. Near it, on the north, are the ruins of the ancient town Issus, and 14 miles southward is the place where was fought the second famous battle in which Darius was defeated by Alexander the Great.

BAIGORRY, a valley in the department of Lower Pyrénées. It contains copper mines which were worked for many years, but were given up about the middle of the 18th century. It is drained by the Nive, and encloses several villages, the most important of which is St. Etienne-de-Baigorry.

BAIKAL, a great lake in the government of Irkootsk, in Siberia, situated between lat. 51° 20' and 55° 30' N., and long. 108° and 110° E. It is crescent-shaped, 366 miles in length from S. W. to N. E., and from 20 to 58 miles in breadth; height above the sea-level, 1,419 feet. The upper Angara, Selenga, Bargoozeen, and other large streams, discharge their waters into it, while its only outlet, the lower Angara, is wholly inadequate to the removal of an equal volume with that received. The depth of the lake varies from 22 to upward of 800 fathoms. It is surrounded by the Baikalean mountains, a spur of the Altai range. It forms a part of the route of the trade between China and Russia, and from Nov. to May is traversed on the ice. Steam vessels were introduced in 1844. The seal and sturgeon fishery is valuable, and herrings are also taken in great numbers. The island of Olkhon, near the north coast, is 32 miles long.

BAIKALEAN MOUNTAINS, a mass of mountains in Siberia, extending in 8 great ranges eastward from the Egtag Altai, and having Lake Baikal, the largest of mountain lakes, embedded in their centre. They rise with a steep ascent in broken and fantastic peaks from the shore of this lake, and also have a precipitous continuation beneath its surface. Not less than 160 rivers flow from their sides into the lake, which discharges its waters only by the lower Angara. This river breaks through the surrounding wall of mountains, and flowing northward, becomes a principal tributary of the Yenesei. Many

parts of the Baikalean mountains indicate volcanic agency. Volcanic rocks and thermal springs abound, and the more regular of the geologic strata show violent contortion, and upheaval; earthquakes, too, are frequent throughout the neighboring country. The mineral riches of these mountains are considerable, embracing beside gold and silver, such gems as the carnelian, onyx, and amethyst.

BAIL (law Fr. *bailler*, to deliver). The literal meaning of the word is delivery, and in law it is used to signify the delivery of the person out of the hands of the sheriff or other officer after arrest into the custody of one or more sureties, who undertake to be responsible for the appearance of the party thus delivered when final judgment shall have been rendered, and process shall have issued thereon to take the body of the defendant in satisfaction. The same term was also used to designate the sureties themselves, and this came to be its most common signification. The proceeding by which this delivery was effected was in form by an instrument called a bailpiece signed by the sureties, expressing that the defendant is delivered to bail on the taking of his body to I. S., &co., which bailpiece being filed in court, the party arrested was thereupon discharged, or, as was commonly said, was left at large; but in fact it was only a transfer of the custody from the sheriff to the bail, who might at any time take him and recommit him to the charge of the sheriff, and this was an exoneration from all liability, if done at any time before the return of an execution against the person of the defendant. In criminal actions the form of giving bail is by what is called a recognizance, which is an instrument similar to a bond, executed by the party, together with his sureties, by which they bind themselves, under a certain penalty, for the appearance of defendant at court when required. By the English law, in all actions civil or criminal, the defendant was entitled to be bailed, except in cases of felony, that is, crimes punishable capitally. All civil actions were said to be bailable, by which was meant that the party arrested was entitled to be discharged upon giving bail. It will also be understood that arrest was allowed in all civil actions, except in a few excepted cases, as in an action upon a judgment recovered in a case in which bail had been given.—The amount for which bail was given was, in actions for a liquidated indebtedness, the whole sum claimed; in actions for unliquidated damages, the amount was regulated by an order of a judge.—By various meliorating provisions in this country, arrest in civil actions upon contract is abolished in most of the states, except when there is a charge of fraud in contracting the debt or in evading payment. In actions for tort, that is where a wrongful act is alleged, and damages claimed by reason thereof, arrest is still allowed, the amount for which bail shall be required being fixed by an order of a judge. In very many actions on contract, also, bail is still exacted upon allegations of fraud, which

creditors are too ready to make.—The term bailable action is now used to signify an action in which a party may be arrested and compelled to give bail, whereas formerly, as has been already explained, it designated an action in which a party was entitled to be discharged from arrest on giving bail.—By the constitution of the United States (8th amendment), by the bill of rights incorporated in the laws of the state of New York, and by the constitution or laws of the states generally, it is provided that excessive bail shall not be required. This is a reenactment of the English statute, 1 William and Mary, and relates to criminal proceedings. Various provisions have been made in the several states and by laws of the United States, to guard personal liberty, whereby, in all cases, except upon a charge of a crime punishable by death, the prisoner is entitled to be let to bail; and any person unlawfully held in custody can be brought up upon a writ of *habeas corpus*, and discharged upon such terms as he is entitled to.

BAILEY, GAMALIEL, an American journalist, proprietor and editor of the "National Era," a newspaper published in Washington, D. C., was born at Mount Holly, New Jersey, Dec. 8, 1807. At 9 years of age he removed with his parents to Philadelphia, where he studied medicine, and received his medical degree in 1828. After making a brief visit to China in the capacity of physician to a ship, he began his career as an editor, in Baltimore, in conducting the "Methodist Protestant." In 1831 he removed to Cincinnati, and was there appointed physician to the cholera hospital during the raging of that pestilence. The expulsion of some of the students from Lane seminary on account of their anti-slavery sentiments and efforts, first prompted him to reflection upon slavery, and to political action against it. In 1836, he joined James G. Birney in conducting the first anti-slavery newspaper in the west, the "Cincinnati Philanthropist." During this year, their printing establishment was twice, once at midnight and once in midday, assailed by a mob, the press thrown into the Ohio river, and the books and papers made a bonfire of. Dr. Bailey was the corresponding secretary of the anti-slavery society of Ohio, and, after the withdrawal of Mr. Birney in 1837, sole editor of the "Philanthropist." Under the banner of Mr. Birney, the liberty party, in which Dr. Bailey was a principal leader, entered the presidential canvass for the first time in 1840. The next year his printing-press was again destroyed by a mob, which was dispersed only at the point of the bayonet. He continued the publication of his paper in Cincinnati till after the next presidential campaign. He was selected for the editor of a new anti-slavery paper, to be started at Washington under the auspices and patronage of the American and foreign anti-slavery society, and the "Philanthropist" became merged in the "National Era," the first number of which appeared at Washington, Jan. 1, 1847. As this paper did not pay its expenses during the first

year, the society which supplied the funds determined to stop it. Dr. Bailey, however, purchased it from the society, and became its sole editor and proprietor. In 1848, he had his last conflict with popular violence, when a mob for 8 days besieged his office. The "Era" has been an influential organ of the anti-slavery political party, the name of which changed more than once, till in the election of 1856, it was merged in the new republican party. This paper has also had a high literary character, and many literary works have been republished from its columns. The most remarkable of them is the famous "Uncle Tom's Cabin" of Mrs. Stowe, which began to appear in the "Era" in June, 1851.

BAILEY, JACOB WHITMAN, professor of chemistry, botany, and mineralogy in the U. S. military academy at West Point, an eminent microscopist and algologist, was born April 29, 1811, in the town of Ward, Mass., died Feb. 27, 1857. In early life he removed to Providence, R. I., where he received a common school education. On a visit of the West Point cadets to that city, he formed an acquaintance with some of the officers, which resulted in his seeking and obtaining admission to the military academy, at which he graduated July, 1832. He was appointed lieutenant in the artillery, and passed the next 6 years at several military stations in Virginia and Carolina. Scientific tastes, which had manifested themselves in early youth, rendered military pursuits comparatively unattractive; and in 1839 he entered upon the more congenial duties of the professorship to which he had been elected, first as assistant and soon after as principal professor. He was on board the steamer Henry Clay when it took fire on the Hudson in 1852, where his wife and only daughter perished. He had, previously, symptoms of pulmonary disease, and his exertions and exposure on that occasion induced their rapid development, terminating in his death. As a man he was exceedingly modest, unobtrusive, gentle, genial, truthful, and universally beloved. He performed the proper duties of his office with great faithfulness and ability; and his published papers show numerous improvements in chemical processes and apparatus. His great claim for scientific distinction, however, rests upon his investigations with the microscope, and his acquirements in those branches of botany and zoology which can be illustrated only by it. His earliest observations are said to have been made with globules of glass blown by himself, in the manufacture of which he was very skilful. He early began the practice of recording his observations, leaving nothing to mere recollection, and having always at hand permanent data for his subsequent papers; and his great skill with the pencil rendered him independent of artists, enabling him to give accurate delineations of every thing. His volume of "Microscopic Sketches" contains about 3,000 original figures. His earliest

recorded observations date back to 1838, and related mostly to the common vegetable and animal tissues. In 1839, while examining some aquatic plants, his attention was arrested by a curious object which he did not then understand. It was one of the diatomaceous plants, and gave a new turn to his investigations, leading him to devote himself with great zeal to the minute animal and vegetable organisms, at that time all included under the general term, Infusoria, and, as a kindred branch, to the whole family of algae. Stagnant waters, fossil deposits, mud, guano, and whatever other sources afforded specimens, were collected and scrutinized. Among the principal subjects of his research were the fossil deposits of Richmond and Petersburg in Virginia, the rice fields of the south, the dredgings of the coast survey, and of the line of soundings across the Atlantic, made by Lieut. Berryman in reference to the laying of the telegraphic cable. A large proportion of his observations must be regarded as original, inasmuch as he was entirely destitute of works on the subject, had no predecessor in the country, and for many years no collaborator. But gradually he obtained illustrative works from abroad; and the truth and beauty of his observations not only attracted others into the field, but procured him the correspondence and verifications of all the principal microscopists and algologists of the old world.—His "Microscopical Collection" is a wonderful monument to his industry and science. More than 8,000 objects, fixed upon slides, are catalogued and marked in such a manner that each one can be readily found; and as they are objects either described by himself, or received directly from other describers, they must always possess the highest authority. His collection of algae is equally complete and authentic, consisting of about 5,500 specimens, systematically arranged in portfolios. These collections, together with all his books on botany and microscopy, his sketches, scientific correspondence, and a large store of rough material from the localities he had studied, he bequeathed to the Boston society of natural history, where they are now deposited, and may at any time be consulted by any one pursuing similar studies. Among his important contributions to science must be reckoned his improvements of the microscope itself. He made ingenious modifications in the movements and mountings of the instrument, and to his experience, science, and encouragement, coupled with the genius and mechanical skill of Spencer, are we indebted for the most powerful instruments, in many respects, which have yet been made; and his defence of them against the detractors of some foreign writers tests his complete command of the whole subject. The most delicate test objects now known were discovered and introduced by him. One of his last undertakings was to construct an indicator, or card, by which to mark the position of an object on the slide so that it

might be found again with certainty. After many trials in perfecting its measurements and adjustments, he succeeded to his satisfaction. He early began to publish the results of his observations. His published papers are more than 50 in number, most of them very brief but always clearly establishing some definite point—some new contribution to science. They are found in Silliman's "Journal of Science," in the "Transactions of the Association of Geologists and Naturalists," in the "Smithsonian Contributions to Knowledge," and in the various state geological surveys. Among the more important were: An account of an excursion to Mount Katahdin, in Maine, in 1837; a series of papers on "Infusoria of the family Bacillaria," afterward embodied in a single paper in the "Transactions of the Association of Geologists and Naturalists" (1848); also, in the same volume, in a paper by Prof. Hitchcock, the identification of the chalk period in Syria, Arabia, Egypt, and America, by the polythalamia found in the sands and rocks of these several regions; his researches on the crystals found in the tissues of plants; the demonstration of the vegetable nature of anthracite coal by the exhibition of vegetable ducts; descriptions of algae and their localities; observations on a new and exceedingly variable animalcule (*pamphagus mutabilis*); examinations of soundings made by the coast survey, in which he indicated the possibility of determining, in many instances, a ship's place in fogs or darkness, by the objects brought up on the lead; notices of books; and finally his extended catalogues of infusoria, fossil and recent, with descriptions and figures, exquisitely drawn by himself, in the "Smithsonian Contributions to Knowledge." Prof. Bailey is entitled to be regarded as the founder of microscopical research in America, and his descriptions and collections must ever constitute the basis for all future investigations in the departments he specially explored. He must be ranked with the most distinguished microscopists and algologists of Europe. He was honored with membership by numerous learned societies, and was the president elect for the session of the American association for the advancement of science in 1857.

BAILEY, or BAILY, NATHAN, an English lexicographer and a schoolmaster at Stepney, near London, died in 1742. His most important publication was an etymological English dictionary, which became the basis of Dr. Johnson's famous work. He was the author also of a *Dictionary Domesticum*, and of several school books.

BAILEY, PHILIP JAMES, an English poet, born in Nottingham, April 22, 1816. He was chiefly educated in the schools of his native town, but studied for a time in the university of Glasgow, where he wrote a successful prize poem upon the theme "Creative Imagination." On leaving Glasgow, in 1838, he chose the legal profession, studied in the office of a solicitor, and in Lincoln's Inn, and was called to the bar

in 1840. He was a reluctant student of law, and found more congenial occupation in the immense library of the British museum, where he abandoned himself to a multifarious course of reading. His first and most remarkable poem "Festus," appeared in 1839, and its defects and merits alike gained for it immediate and wide success. Its subject was the highest questions of philosophy and religion, and it abounded in bold and glowing passages. Yet, unlike the "Faust" of Goethe, which doubtless suggested "Festus," its art was chaotic; it was wildly extravagant, and often as unintelligible as it was fervent; and its few finely imaginative utterances have not been able to retain for the work its first popularity. His later and shorter poems, the "Angel World," and the "Mystic," have both fewer beauties and less prominent defects. Mr. Bailey, after having visited many of the towns of England, has resumed his residence in Nottingham, where, until recently, he gave occasional assistance to his father in the management of a journal.

BAILEY, SAMUEL, a distinguished writer on moral and metaphysical philosophy, politics, and political economy, was born in Sheffield, Yorkshire, Eng., in March, 1787. He received his early education at the principal schools of his native town, and while very young manifested a surprising taste for logical inquiry and philosophical reflection. After spending a few years at the university of Cambridge, he published anonymously his first work, "Essays on the Formation and Publication of Opinions" (Lond. 1820), which caused a great sensation, from the startling novelty of its ideas, and its profound and refined erudition. In 1829 he published another work, "Essays on the Pursuit of Truth," &c., which was a continuation of his first work. He then announced himself as the author, and was chosen a member of several literary and philosophical societies in the United Kingdom, in which capacity he delivered a number of discourses on various subjects, of which he published a selection in 1852. Between this, the date of his last, and 1820, the date of his first publication, several valuable works issued from his pen on various topics of philosophy and political economy, of which the following are among the most important: "A Review of Berkeley's (Bishop of Cloyne) Theory of Vision;" "The Theory of Reasoning;" "A Critical Dissertation on the Nature, Measures, and Causes of Value."—For the last few years Mr. Bailey has led a life of comparative ease and retirement, at his residence in the neighborhood of Sheffield.

BAILEY, THOMAS, the father of the author of "Festus," born in 1785, died Oct. 23, 1856, at Old Basford, Notts, was himself a man of strong literary aspirations, and wrote "Advent of Charity," and several other poems. He is the author of "The Annals of Nottinghamshire," and of the "Records of Longevity," which latter work appeared shortly before his death. He rose from the position of a poor mechanic by his manly exertions, to a station which commanded the respect of the community in which

he lived. In 1830 he was a candidate for parliament in his district, in opposition to the whigs, but was defeated. In the latter part of his life, he was for about 10 years proprietor of the "Nottingham Mercury."

BAILIFF (Fr. *baillif*, Lat. *balivus*), a person to whom some authority or charge is committed. The term as used by the Normans, designated the chief magistrates of counties or shires, and bailiwick is still retained in writs and other judicial proceedings as defining the extent of jurisdiction within which the process may be executed, usually the same as county. It came into general use as a designation of any judicial or ministerial office performed as a deputy of a local magistrate; but as the judicial functions of sheriffs and lords having private jurisdiction declined, bailiffs were known as the ministerial deputies of sheriffs. The term *bound-bailiff* (vulgarized into *bum-bailiff*), is the name of a sheriff's officer who has given sureties to the sheriff for his official conduct. The term *bailiff* was also applied in England to magistrates of certain towns, keepers of castles, &c., and is still used to some extent in one or other of these senses, but more commonly expresses stewards or agents of lords or other large land proprietors. In the United States it is sometimes, but rarely, used for a sheriff's deputy or constable, and is occasionally met with as a legal designation of an agent liable to account for the rents or profits of property intrusted to him. In Scotch law a synonymous term, *baillie*, is applied to a ministerial officer to whom writs are directed. It is also used to designate a city magistrate similar to an alderman in England.

BAILIWICK, the jurisdiction of a *baillif*, from *baillie* and *wick* (*vicius*), a town or village.

BAILLET, ADRIEN, a learned French writer, born June 18, 1649, at Neuville, a village near Beauvais, in Picardy, died Jan. 21, 1706. He was first a teacher and then a priest, but abandoned these pursuits for study and composition. So absorbed was he in intellectual pursuits, that he passed days often in undress, with but a single meal, and the smallest amount of sleep. His first publication was entitled "Judgments of the Learned upon the Principal Works of Authors," a book of criticism which taught better rules than it illustrated. He also produced a book on "Devotion to the Holy Virgin," the lives of the Saints, which extended to 4 volumes, and a life of Descartes.

BAILLEUL, a town in France, department Nord, near the Belgian frontier; population 9,828. Its manufactures embrace lace, thread, linen, perfumes, soft soap, snuff, crockery, and pottery. Bailleul cheese is noted all over France.

BAILLIAGE, (territory of a *baillif*), a French term equivalent to *bailiwick* in English. In Switzerland the term was applied to those territories which were subject to some of the cantons, and governed by bailiffs appointed by and responsible only to the cantons. These Swiss bailiages anciently formed part of the Milanese. Their names were Mandrisio, Balerna, Locarno,

ugano, Val-Maggia, Bellinzona, Riviera, and Val-Breuna. Most of these were ceded to the wiss cantons in 1513 by Maximilian Sforza, in ratitude for Swiss aid in recovering the duchy of Milan from the troops of the French king, Louis XII. In 1802, they were formed into the canton of Tessin, by Bonaparte, which arrangement was confirmed by the legitimate sovereigns of Europe in 1814, and by the Helvetic diet.

BAILLIE, JOANNA, English dramatic poet, born in Lanarkshire, Scotland, in 1762, died at Hampstead, near London, Feb. 23, 1851. Her father, a country clergyman, who afterward became divinity professor in Glasgow university, gave her a sound education. When her brother, Mr. Matthew Baillie, the celebrated physician, commenced practice, she and her sister, Agnes, too removed to London. A bequest from Dr. William Hunter, her maternal uncle, made the sisters moderately independent, and they took up their residence at Hampstead, where they continued for over 60 years. In 1798, at the age of 36, she published the 1st volume of plays on the passions, and successive volumes appeared in 1802, 1811, and 1836. A volume of miscellaneous plays appeared in 1804; it contained a Highland tragedy called the "Family Legend," which Scott (who made her acquaintance in 1806) had represented at the Edinburgh theatre early in 1810, with the aid of a prologue by Henry Mackenzie, and an epilogue by himself. It ran for 14 nights (with the assistance of splendid costumes, beautiful scenery, and excellent acting), but was less successful than produced in London in 1815. "De Montfort" ran for 11 nights at Covent Garden theatre, Mrs. Siddons and John Kemble playing the leading parts. At a later period Kean produced this play, but it failed. Her plays, "Henriquez," and "The Separation," were also brought out in London. Miss Baillie also wrote plays, published separately, called "The Martyr," and "The Bride." Sir Walter Scott declared that her merit as a dramatist was so great as to prevent all attempts at competition on its part. Lord Byron said "Women (saving Joanna Baillie) cannot write tragedy; they are not seen enough, nor felt enough of life or it." Yet her dramas met partial and temporary success on the stage. Her plays were more poetical than dramatic, and the underplots generally weak and light. Her delineation and development of character were neither credible nor artistical. Beside ballads, fugitive pieces, occasional poems, and songs (many of them in the Scottish dialect, and humorous), Miss Baillie published metrical legends of excited characters, and a prose dissertation, of some length, called "A view of the General Tenor of the New Testament, regarding the Nature and Dignity of Jesus Christ." Miss Baillie, who was 89 when she died, literally new 2 generations of authors in London. She was greatly esteemed, and retained her intellectual faculties to the last. Her poetical works,

in one large 8vo volume, were finally collected and published in 1850.

BAILLIE, MATTHEW, born Oct. 27, 1761, at the manse of Shotts, Lanarkshire, Scotland, died in London, Sept. 23, 1823. He was son of Dr. Baillie, professor of divinity in the university of Glasgow; elder brother of Joanna Baillie, the poetess; and nephew of William and John Hunter, the eminent anatomists. Having received the rudiments of education at Glasgow, he was sent to London in 1779, under the care of Dr. William Hunter, to whom, 2 years after, he became assistant and demonstrator, visiting Oxford during the terms. In 1783, on the death of his uncle (who bequeathed him his anatomical theatre and the use of his museum for thirty years), Mr. Baillie commenced giving lectures in conjunction with Mr. Cruikshank, the anatomist. In 1789, he took the degree of M. D. at Oxford, and immediately after was made member of the college of physicians in London. In the same year he married Miss Denman, sister of the late chief justice of England. The increase of his practice as a physician, particularly on the retirement of Dr. Pittcairn, compelled him to resign his position as a lecturer in 1799. Soon after, he was called in to join in consultation on the illness of George III., who appointed him one of his physicians in ordinary, and offered to make him a baronet. From that time to the death of the king, Dr. Baillie was principal director of the royal treatment. By the time he was 40, his income was immense,—earned, however, by the sacrifice of leisure, ease, and repose. In one year, during which he said that he had scarcely time to take a regular meal, he received £10,000 in fees. Early in 1823 he was compelled, by illness, to retire into the country, and died at his estate (Duntisbourne house, Cirencester, Gloucestershire) in the following September. His skill as an anatomist, his accuracy in diagnosis, and his knowledge of the qualities and action of medicines, combined to make him a great physician. His published works on the morbid anatomy of the human body, with illustrative engravings, rank very high, and were translated into French, German, and Italian. He bequeathed his medical library and his valuable collection of anatomical preparations to the college of physicians, with £600 to keep it in a perfect state of preservation. The pressure of his great practice sometimes rendered him irritable, but after he ceased to visit out-door patients his temper greatly improved. In stature he was below the middle size. He never lost his Scotch dialect. His character as a physician may be summed up in the words he used to say to his own family: "I know better than others, perhaps, from my knowledge of anatomy, how to discover a disease; but when I have done so, I do not know better how to cure it."

BAILLIE, ROBERT, a Scotch historian and theologian, born at Glasgow in 1599, died in 1662. He held several offices of importance,

and in 1641 protested, at London, in the name of the Scotch lords, against the changes introduced by Archbishop Laud into the Scotch church. He afterward represented the Scotch church at the synod of Westminster, and, in 1649, complimented Charles II. at La Haye in the name of the general assembly of the clergy. Baillie was versed in 12 or 13 languages, including the Hebrew, Chaldee, Samaritan, Coptic, Syriac, Arabic, &c. He wrote several works in Latin and English.

BAILLOT, PIERRE MARIE FRANÇOIS DE SALES, a celebrated French violinist, born in 1771, at Passy, near Paris, died in that metropolis, Sept. 15, 1842. He was a professor in the conservatory; travelled in Russia, Belgium, Holland, and England, and was considered without a rival. His style was severely classical, as distinguished from that introduced by Paganini.

BAILLY, JEAN SYLVAIN, a French astronomer, statesman, and historian, born at Paris, Sept. 15, 1786, guillotined Nov. 12, 1793. Leaving the art of painting, to which he was educated, he pursued poetry and belles-lettres, until his acquaintance with La Caille, when he turned his attention to astronomy, and calculated the orbit of the comet of 1759. In 1768, he was admitted to the academy of sciences, and soon after published a reduction of observations on the zodiacal stars, made by his friend La Caille, then deceased. He competed with the immortal Lagrange for the academy's prize in 1764, on the theory of Jupiter's satellites. His treatise on that subject, published in 1766, also contains a history of that section of astronomy. In 1771, he published a valuable and interesting treatise on the light of those bodies. His *Eloges* on Charles V., Corneille, Leibnitz, Molière, and La Caille, show that his abstruser studies had not injured the grace and power of his pen; and after being defeated by Condorcet, in a contest for the place of secretary to the academy, in 1771, he wrote a history of astronomy, still a standard work; the 1st volume published in 1775, the 4th in 1788. To these he afterward added a volume on oriental astronomy. In 1784, he was chosen secretary of the academy, also admitted to the French academy, and the next year admitted to the academy of inscriptions; a rare thing for one person to belong to the three academies. In 1784, he was one of the commission to investigate Mesmer's discoveries, and his report (since translated into English) gives abundant evidence of his ability and wisdom in the discussion of the physical effects of moral causes. He espoused the democratic cause in the revolution, was elected from Paris, in 1789, first deputy of the *tiers-état*, and was chosen president of the assembly. When the national assembly was formed, he retained the presidential chair, and dictated the famous oath by which the members swore that they would "resist tyrants and tyranny, and never separate until they had secured a free constitution." In July, 1789, he was chosen mayor of Paris, and discharged his duties

during 26 months of a most trying and dangerous period with great firmness and wisdom, and spent largely from his private funds in relieving the poor. His firmness in suppressing a riot, and in defending the queen from charges brought against her, having lessened his popularity, he resigned his office in Sept. 1791. After 2 years of literary pursuits, he was arraigned for imaginary political offences and barbarously executed, retaining to the last his noble serenity of mind. Several posthumous works of his have appeared; the most noted are an *Essay on the Origin of Fables and Ancient Religions*, and his *Memoirs of an Eye-witness from April to Oct. 1789*.

BAILMENT (Fr. *bailier*, to deliver), a legal term signifying the delivery of a thing upon some trust, express or implied, usually the redelivery of the thing itself or its equivalent, or some disposition of it according to the direction of the bailor. The different kinds of bailment may be expressed, without legal technicality, to be: 1, a deposit for safe keeping; 2, lending or hiring for use of bailee; 3, a pledge or pawn as security for something done or to be done by pawnee; 4, delivery of a thing for the purpose of having work done upon it, or of being carried to some place designated. The obligations arising from these different kinds of contract vary according as the bailment is for the benefit of the bailor or bailee. When it is exclusively for the use of the former, as where a thing is borrowed for use by bailee, the strictest degree of care is required; if the trust is to keep the thing bailed or to do something in respect to it for benefit of bailor without compensation, ordinary care, such as a man bestows upon his own property, is all that is required, and if he is habitually careless about his own affairs, he is not bound to do more for another than he does for himself; if the trust is for mutual benefit, as when goods are to be kept or something done respecting them for a reward, ordinary diligence is to be exercised, such as prudent and careful men would give to their own affairs. In respect to 3 cases of bailments, the rule of law is peculiar, viz. the cases of inn-keepers and common carriers: both of whom are made responsible absolutely for the goods intrusted to them, except against inevitable accident called the act of God. It is not sufficient that they use the utmost care; they are held to be insurers of the safety of the goods except as above specified; the inn-keeper therefore is answerable for the property of his guest, even if lost by theft or burglary, and a carrier for the goods in his charge, against every casualty except loss by lightning or tempest, and he is not exonerated in case of destruction by fire; in which last particular the rule is even more severe than it is in respect to the inn-keeper. The English law of bailment was quite imperfect until the time of Lord Hale, who resorted to the civil law to supply the deficiency then existing in the adjudged cases. Some peculiarities still remain growing out of old decisions of judges having a limited acquaintance

with the principles applicable to this class of cases. Thus it was held in one case reported by Coke, that an undertaking to keep safely made the bailee responsible for extraordinary care, even if he receive no compensation; and Coke added to this that an undertaking to keep was the same as undertaking to keep safely, but this has been exploded. The treatise of Sir William Jones was admired as a work of extraordinary genius until the English lawyers became more acquainted with the civil law and especially with the writings of Pothier, when it was found that the subject had been treated of by the last-named author in a singularly felicitous manner, and his work on "Obligations," is now an acknowledged authority in English and American law.

BAILY, EDWARD HODGES, an English sculptor, born at Bristol, March 10, 1788. His father was a ship-carver, and one of his figure-heads, attracting the attention of Flaxman, is said to have drawn from that artist the remark that there were few living sculptors who could have surpassed it. The son was destined to commercial pursuits, and when 14 years old was taken from school and placed in a counting-house. But a natural inclination for the fine arts contrived to gratify itself. He made acquaintance with a young wax modeller, whose processes he at once set himself to observe and imitate; and he soon acquired such skill and facility that he ventured, at the age of 16, to resign his mercantile hopes, and to commence life as an artist. Before he had any regular employment, he suddenly married; but was soon obliged to leave his wife at Bristol, while he himself went to London to seek for support. Flaxman received him into his studio. Here his progress was rapid. From the society of arts and sciences he received the silver medal, and from the royal academy he gained both the gold and silver medals, and a purse of 50 guineas; his subject on the latter occasion being "Hercules restoring Alceste to Admetus." At the age of 25 he produced the statue of "Eve at the Fountain;" after which he was induced to leave the studio of Flaxman, and to become chief modeller to the firm of Rundell and Bridges, goldsmiths. Yet Mr. Baily did not cease his highest efforts, and soon produced the two classical pieces of "Hercules casting Lycas into the Sea" and "Apollo discharging his Arrows." He wrought the colossal statue of Nelson in Trafalgar square. For many years Baily has resided in the house once occupied by Bacon, the artist, one of whose works had given the first impulse to his genius. Among his later and best productions, are his "Eve listening to the Voice," "Preparing for the Bath," "The Graces," and a colossal statue of Sir Robert Peel.

BAILY, FRANCIS, a London broker, born in 1774, author of several valuable works on annuities, assurances, and kindred subjects, and an active promoter of astronomy in Great Britain. He died in 1844, having during the last 19 years of his life given himself almost wholly to the

service of the astronomical society and British association.

BAINBRIDGE, CHRISTOPHER, an English prelate and cardinal, born about the middle of the 15th century, at the village of Hilton, in Westmoreland, died at Rome, July 14, 1514. He became bishop of Durham in 1507, and archbishop of York in 1508. It was attributed to his influence that Henry VIII. took part with the pope against Louis XII., and for so considerable a service he was, in March, 1511, created cardinal of St. Praxedes. There is still extant from him a letter to Henry VIII., written upon the occasion of the latter receiving from the pope the title of Most Christian King. He died by poison administered to him while on a visit to Rome by his steward, Rinaldo da Modena, who confessed himself to have been suborned to the act by the bishop of Worcester, then resident in Rome.

BAINBRIDGE, JOHN, an English astronomer, born in 1582 at Ashby de la Zouche, died in 1648. He was educated at Cambridge, and in 1619 published "An Astronomical Description of the late Comet." This work introduced him to Sir Henry Saville, who appointed him professor of astronomy at Oxford. While there, he published valuable editions of some of the most esteemed treatises of the ancient astronomers.

BAINBRIDGE, WILLIAM, a commodore in the United States navy, born in Princeton, N. J., May 7, 1774, died in Philadelphia, July 28, 1838. At a very early age he embarked in the merchant service, in which he soon rose to a command, and in 1798, when our difficulties with France rendered the organization of a naval force necessary, he received the commission of lieutenant, and was appointed to the command of the schooner *Retaliatio*. In the month of September of that year, while cruising off Guadeloupe, the *Retaliatio* was captured by a French squadron, and carried into the port of Basseterre, where she was detained, and Bainbridge, and his officers, and men, held as prisoners until Dec. following, when she was given up. Upon his liberation, Bainbridge returned to the United States with his command, and upon his arrival was promoted to the rank of master and commander, and appointed to the command of the brig *Norfolk*, in which vessel he cruised very actively for the protection of our commerce in the West Indies during a large portion of the quasi-war with France. In May, 1800, he was promoted to the rank of captain, and appointed to the frigate *George Washington*, which was ordered to carry a large amount of tribute to the regency of Algiers. He arrived at Algiers, and delivered the tribute in September following, when the dey required him to receive on board his ship an ambassador, and presents to a large amount to be carried to Constantinople. Remonstrances on the part of Capt. B. were in vain. He was under the batteries of Algiers, a declaration of war against the United States was threatened

by the dey if he did not comply, and a valuable, unprotected trade in the Mediterranean was at the mercy of Algerine cruisers if this threat was executed. Yielding to these considerations, Capt. B. executed this most unwelcome commission, arriving at Constantinople in the early part of November following. He remained in that port nearly 2 months, during which time he was treated with great distinction by the Ottoman government, upon which he made a most favorable impression. Early in January, 1801, he returned to Algiers, and soon afterward sailed for the United States. The administration fully approved the course he had pursued. He was soon employed in the Mediterranean again in command of the frigate *Essex*, and afterward upon the declaration of war against the United States by Tripoli, was appointed to the frigate *Philadelphia*, 38 guns, one of the vessels of the squadron sent against that power, under the command of Com. Edward Preble. He sailed for the Mediterranean in July, 1803, somewhat in advance of the rest of the squadron. Upon his arrival at Gibraltar he was informed that 2 Tripolitan cruisers were off Cape de Gatte, and sailed immediately in quest of them. And on the night of Aug. 26, while under that cape, he fell in with the Moorish frigate *Meshboa*, of 22 guns, and 120 men, having an American brig in company. Upon examining the Moorish ship he found that she had captured the brig *Oelia* of Boston, and had her master and crew then on board prisoners. He immediately captured the frigate, and recapturing the brig, restored her to her proper master. The Moorish captain at first declined to show authority for his acts, but upon an intimation from Bainbridge that if he did not, he might treat him as a pirate, he produced an order from the governor of Tangier for the capture of American vessels. Bainbridge carried his prize to Gibraltar, and after a short cruise off Cape St. Vincent, made in consequence of a false rumor of another Moorish cruiser in that direction, proceeded to join the blockading squadron before Tripoli. It is proper to add that the capture of the *Meshboa* prevented further depredations upon American commerce by the Moors, and that Com. Preble, who arrived at Gibraltar soon after Bainbridge sailed for Tripoli, had no difficulty in placing our relations with Morocco upon a pacific footing. Soon after Bainbridge joined the blockading squadron the great misfortune of his life befell him. On Oct. 31, 1803, a vessel was seen about 9 in the morning, considerably to the eastward of the port, steering for it. Chase was immediately given, and continued until about half-past 11, when it was given up, and the ship hauled off shore, which by this time was pretty near. The leads were kept going, and to the surprise of all on board, the water was found to shoal instead of deepen. When 6½ fathoms were given by the leadsmen, the helm was ordered a-port, and the yards braced up, but the orders were hardly

given before the ship struck, and remained fast. Every possible effort was made to float her. Most of the guns were thrown overboard, water started, and finally the masts were cut away, but all in vain. She was soon surrounded by gunboats from Tripoli, which was about 3 miles distant, and a fire was opened upon the frigate, which it was impossible to return, the vessel having fallen over so far that not a gun could be brought to bear. At this juncture Capt. Bainbridge decided, after consulting his officers, to surrender, having first taken such measures as it was thought would insure the final loss of the ship. At about 5 P. M. the colors were struck. The Tripolitans immediately took possession, and Bainbridge, and his officers, and men, after being plundered of most of their effects, were carried to Tripoli, reaching the town at about 10 o'clock at night. They numbered 315 souls, and were immediately conducted into the presence of the bashaw, who held a conversation with Bainbridge through an interpreter, and consoled him for his captivity, reminding him that it was "but the fortune of war." He remained with his associate prisoners in Tripoli until the conclusion of peace, which took place June 3, 1805, and it should be recorded, that during their tedious captivity of 19 months, they were indebted to Mr. N. C. Nissen, the Danish consul, for every attention and kindness which that excellent gentleman could possibly bestow, and for which he afterward received the thanks of congress, and a handsome testimonial from Bainbridge and his officers. The prisoners were placed under the immediate care of Sidi Mohammed D'Ghies, the minister for foreign affairs, who evinced great delicacy and good feeling in his treatment of them on all occasions. On his return to the United States, Bainbridge was received with very general demonstrations of kindness and respect. A court of inquiry was held for the loss of the *Philadelphia*, and the result was an honorable acquittal, and under the act of April, 1806, reorganizing the navy, he became the 7th on the list of captains. He did not serve afloat again until the war of 1812 with England, but it was doubtless through the exertions of himself and Capt. Stewart that Mr. Madison was induced, contrary to the advice of his cabinet, to depart from a policy which had been resolved upon and which would have been ruinous. In the belief that our navy would be overwhelmed by that of England, it was decided to lay up our ships of war to save them from capture. Capts. B. and S. addressed a letter to the president, urging, in the strongest manner, that every vessel should be immediately sent to sea. The president immediately had personal interviews with these officers, and decided to change the plan, one or two of the cabinet only assenting, and that upon the ground that the ships would soon be captured, and the country thus be rid of the cost of maintaining them. Our little naval force was immediately commissioned, and a series of brilliant victories followed, which com-

pletely dispelled the idea, long prevalent with the world, that the British navy was invincible. In Sept. 1812, Bainbridge, now commodore, was appointed to the command of a squadron, consisting of the *Constitution*, 44 (his flag-ship), *Essex*, 82, and *Hornet*, and sailed from Boston on Oct. 25, for a cruise. On Dec. 26, off St. Salvador, while separated from the rest of his squadron, it was his good fortune to fall in with and capture H. B. M. frigate *Java*, Capt. Lambert, rated 88, but mounting 49 guns, with a complement of 400 souls. She was bound to Bombay, and had on board Lieutenant Hислоp on his passage to that place as the governor. The action commenced at 2 P. M., and continued 1 hour and 55 minutes. The crew of the *Java* was 174 killed and wounded, and the ship was reduced to a wreck, not a spar being left standing, while the *Constitution* had but 9 killed, and 24 wounded, and the ship was but little injured. She went into action with her royal yards across, and came out of it with all 8 of them in their places. She was a heavier ship than her adversary, but our superiority in gunnery was manifest in this, as a most of our other naval conflicts during this war. Com. Bainbridge was severely, and Capt. Lambert mortally wounded. The *Java* was destroyed, her injuries precluding the possibility of getting her into port, and the *Constitution* put into St. Salvador, where the prisoners were landed on parole. A touching scene occurred on the quarter-deck, where Capt. Lambert was lying in his cot, just before he was taken out of the ship. Com. Bainbridge approached him, supported by 2 of his lieutenants, to restore the sword of the dying officer, and they parted with the warmest expressions of mutual regard. Capt. L. died a day or two afterward. Between Gen. Hислоp and Com. B. a strong personal friendship commenced on this occasion, which was never interrupted. The *Constitution* now returned to the U. S. for repairs, being much decayed, and on her arrival Bainbridge was everywhere received with enthusiasm; congress voted him a gold medal, and silver ones to his officers, and \$50,000 were distributed to the crew as prize money. He gave up the command of the *Constitution* for that of the navy yard at Boston, which he retained until the peace. In 1815 he was appointed to the command of a squadron of 20 sail, the *Independence* ship of the line bearing the flag. This force was intended to act against Algiers, then at war with us, but peace was concluded before it reached the Mediterranean. Com. B., however, during this command, settled disputes with the Barbary powers satisfactorily, and returned home. Upon his arrival he was appointed to command afloat at Boston. In 1819 he again commanded in the Mediterranean, the *Columbus*, 80, a new vessel, being the flag-ship, and returned from this, his last service afloat, in 1821. From this time until his death, he was almost constantly employed in important shore service, commanding at dif-

ferent times the navy yards at Boston and Philadelphia, and holding the position of president of the board of navy commissioners. The personal appearance of Com. Bainbridge was very striking. He was tall and muscular, but well-proportioned; his eye was piercing; his expression animated, and all his motions were dignified and graceful. As an officer he had few superiors. Though ardent in his temperament, he was cool in danger, and always had the confidence of those under his command. His system of discipline, though rigid, was always consistent and just, and he was remarkable for paying the greatest attention to the formation of his young officers. The whole of his long and arduous career was most useful to his country, and honorable to himself.

BAINES, EDWARD, an English politician, born in Lancashire, 1774, died at Leeds, 1848. Having partly served his apprenticeship at Preston, to the printing business, he obtained employment in the office of the "*Leeds Mercury*." In time, he became proprietor and editor of that paper, which his ability, tact, and consistent principle, eventually placed at the head of the provincial press of England. He was always the advocate of liberal principles,—particularly of Catholic emancipation and parliamentary reform. In 1834, on the vacancy caused by Mr. Macanlay's acceptance of office in India, Mr. Baines was chosen representative of Leeds in parliament, and occupied that position until 1841, when ill health compelled him to retire. Beside performing the duties of a journalist and politician, Mr. Baines wrote the "*Wars of Europe*," from the French Revolution to the fall of Napoleon, a "*History of the Reign of George III.*," and, richly illustrated, "*The County Palatine of Lancashire*."

BAINI, GIUSEPPE, an Italian musician, born at Rome, in 1775, died in 1844, was the director of the papal chapel, and wrote *Memorie storiche-critiche della vita e delle opere di Giovanni Pierluigi da Palestrina* (Rome, 1839). He composed for the Sistine chapel a *Miserere* and a *Dies Irae*.

BAINS-DU-MONT-D'OR, a village of France, department of Puy-de-Dome. It is surrounded by mountains, which abound with minerals and mineral waters, and medicinal plants. The public baths, built entirely of lava, are extensive.

BAIOLENSIANS, or BAGNOLENSIANS, one of the sects of the Cathari, in the 12th century, who derived their name from the town of Bagnols, in France. They differed from the principal branches of the Cathari only in the deeper disguise which they threw about their opinions.

BAIRAKTAR, MUSTAPHA PASHA, Ottoman grand vizier, born 1755, died Nov. 14, 1808. In 1806, as pasha of Rostchoo, he opposed the Russian troops who had invaded Moldavia and Wallachia. During the revolt of the janizaries, Bairaktar espoused the cause of Selim III., and opposed Mustapha. Mustapha having caused the assassination of Selim, Bairaktar avenged

the murdered man by deposing Mustapha, and replacing him with Mahmoud (July, 1808). Bairaktar now became Mahmoud's chief adviser. When the janizaries revolted anew, and demanded the restoration of Mustapha, Bairaktar put an end to his life, together with that of his favorite mistress.

BAIRAM, a feast of the Mohammedans, resembling in its succession to the great fast of the Ramadan, the Easter and Lent of Catholic countries. During the Ramadan, a fast of extreme strictness is observed by all good Mussulmans, and the commencement of the Bairam is looked for with great anxiety, and inaugurated with every demonstration of public joy and gratulation. It commences with the new moon of the month Shewal. There is also a little Bairam, corresponding to Whitsuntide, which occurs 70 days after the other, but is attended with less rejoicing. They are the only two festivals enjoined by the Koran. Being calculated by the lunar year, the feasts run over all the seasons in a cycle of 33 years.

BAIRD, DAVID, bart., K. O. B., British general, born Dec. 6, 1757, died Aug. 18, 1829. He entered the army at an early age, and was sent to India, where, in September, 1779, he was engaged in the affair of Peramboucum, in which Hyder Ali and his son Tippoo destroyed a body of English troops after surrender. Captain Baird, after being severely wounded, was among the prisoners, and was detained for about 4 years in the fortress of Seringapatam. After his release, he returned to England, and having attained a lieutenant-colonelcy, he returned to India in 1791, and was employed in the war against Tippoo Sultan at the close of the century. He had charge of the storming party at Seringapatam, and headed the assault, which was completely successful. His services on this occasion were passed over in favor of Col. Wellesley (afterward the duke of Wellington), his inferior in rank, who was in command of a division, but had taken no share in the capture. Baird received the thanks of parliament, but Col. Wellesley received the more substantial reward of the governorship of Seringapatam. In 1801, Baird was sent from India to Egypt, but on his arrival at Rosetta, he found the French had capitulated, and he returned to India. In 1807, he was engaged in Lord Cathcart's expedition against Denmark, but here again his merits were passed over by the commander-in-chief, while Col. Wellesley's were highly lauded. In 1808, he was engaged in the army of Sir John Moore, and took a prominent part in the battle of Corunna, where he was severely wounded. On the death of Sir John Moore he was commander-in-chief, but his wounds incapacitated him from doing the duties of his position. This was his last active service.

BAIRD, ROBERT, D. D., an American author and clergyman, born, of Scotch parentage, in Fayette county, Pennsylvania, Oct. 6, 1798. He prosecuted his studies at Washington and Jeffer-

son colleges in his native state, at the latter of which he received his first degree in 1818. He received from his father a patrimony of a horse and saddle, and after spending a year in teaching a select school at Bellefont, during which he was a frequent contributor to the village newspaper, he entered the theological seminary at Princeton, where he continued his studies for 3 years, during the latter of which he was tutor in the college. In 1822, he took charge of an academy in Princeton, and held the situation for more than 5 years, occasionally preaching in the neighboring pulpits. He then entered more fully upon his professional labors, as agent of some of the American religious and benevolent societies. He first proposed to the Bible society a plan for supplying a copy of the Bible to every destitute family in the state of New Jersey, which was adopted, and carried into execution under the care of a committee, of which he was chairman. As agent of the missionary society of New Jersey, he did much to lay the foundation of the present system of public school education in that state. In 1829, he became agent of the American Sunday school union, and during 5 years held meetings in every part of the country in furtherance of the objects of that institution. It was his custom to address these meetings but little himself, but to engage the services of effective orators, both statesmen and preachers, and the success of his labors was seen in raising the annual revenue of the society from \$5,000 to \$28,000. In 1835, he visited Europe, both with the curiosity of a traveller, and with purposes of philanthropy. He remained abroad, excepting 2 brief visits home, for 8 years, striving to revive the Protestant faith in the southern countries of Europe, and to promote the cause of temperance in the northern countries. Upon the formation of the foreign evangelical society, since merged into the American and foreign Christian union, he became its agent and corresponding secretary. In the summer of 1842, he published, in Scotland, a work entitled "Religion in America," which was translated into several of the continental languages. After having remained 3 years in this country he went again to Europe in 1846, to attend the world's temperance convention in Stockholm, and the meeting of the evangelical alliance in London. The productions of Dr. Baird's pen have been numerous, notwithstanding his extensive travels and many cares. His "Visit to Northern Europe" has had considerable popularity in this country, and his late work on the "State and Prospects of Religion in America," has been read with interest abroad. His continued labors, both in Europe and America, to promote Protestant Christianity, have gained for him the title of the international preacher.

BAIREUTH, a city of Bavaria, capital of the circle of upper Franconia, situated on the left bank of the Red Main, 40 miles N. N. E. of Nuremberg. The town is well built, and partly surrounded by ancient walls. It has a castle,

riding-school, gymnasium, theatre, public library, &c. Baireuth has an active trade, principally in grain, several breweries and distilleries, manufactures of woollen and cotton fabrics, leather, and earthenware. There are 8 palaces in the vicinity. One of them, the Hermitage, is a quaintly built structure, where are shown the apartments of Frederic the Great, and where his sister, the margravine of Baireuth, wrote her memoirs. In the cemetery near the city is a monument erected to Jean Paul Richter, who died here in 1825. The population, chiefly Protestants, is about 17,000. Baireuth was formerly the capital of the principality of the same name, which was annexed to Prussia in 1791. In 1807 it was ceded to France, and in 1810 made over by that power to Bavaria.

BAIUS, or DE BAY, MICHAEL, a Catholic theologian, was born in 1513, at Melin, in Flanders, died Dec. 16, 1589. He was educated at the university of Louvain, in which he became a professor, and was afterward appointed chancellor, conservator of its privileges, and inquisitor-general for the Low Countries. He adopted the doctrines of St. Augustine, whose works he is said to have perused 9 times. The defence of these doctrines brought him into collision with his colleagues, who, in 1552, selected 18 of his most objectionable dogmas and laid them, as heretical, before the university of Paris, which, in 1560, condemned the entire 18 dogmas as either erroneous or more or less tinged with heresy. This decision, however, did not deter the Spanish court from sending Baius as its representative to the council of Trent in 1568. In the 2 following years he published those celebrated controversial works which called forth, on Nov. 1, 1567, the denunciatory bull of Pope Pius V., which anathematized, indeed, 76 of his favorite dogmas, but did not name him. He immediately addressed a very explicit epistle to his Holiness on the subject of his opinions and the recent bull. Pius replied with equal explicitness that he must submit unreservedly to the decision of the church, and humble himself as an erring son. Baius, not desiring to be excommunicated, ultimately obeyed, kneeling in the presence of the papal legate. In a few years, however, he was again active as a controversialist, but in pursuance of a bull of Gregory XIII., issued Jan. 9, 1579, he made a second retraction, March 24, 1580. The contest was renewed from time to time until his death. His works were published at Cologne, in 1696. Baius was a man of great learning and virtue. His doctrines subsequently became the basis of what is called Jansenism.

BAJAU, the name of the sea-gypsies or rovers of the Malay archipelago. Bajau, or as more commonly pronounced by Malays, Bajak, has become synonymous with pirate. They live upon the water; and, with their women and children, move in fleets of prahus from coast to coast—from Sumatra to Papua—fishing, collecting tripping, or diving for pearls; and also, whenever a favorable opportunity is presented,

plundering some weak native craft or stranded European ship. The Javanese call them *wong-kambang*, the floating people; and the people of Celebes call them *Tau-ri-jene*, men of the sea. They are of genuine Malay stock, and speak the Malay language as it is spoken at the chief centres of Malay civilization. They practise many pagan superstitions, and observe the Mohammedan rite of circumcision. There are no trustworthy data to enable us to determine their numbers, but some well-informed travellers have supposed that there are probably not less than 50,000 of these remarkable floating people.

BAJAZET, BAJAZID, or BAYAZID. I. Ottoman sultan, born A. D. 1347, died A. D. 1403. He was the son of the first Amurath. After the battle of Kossovo, and his father's death, he ascended the throne. He was incessantly occupied in the first years of his reign in subduing his rebellious subjects or adding to his conquests. He subdued the whole of Asia Minor, and brought all the small principalities under the Turkish government. In 1391 he subdued Philadelphia, the last of the Greek cities of Asia, and in 1398 laid siege to Constantinople and compelled the emperor to assign a quarter to the Turks. In 1396 Bajazet gained a terrible victory over the emperor Sigismund, and utterly routed his army of 100,000 men. He subdued Greece, which, under the celebrated George Castriote, had so long defied his father, and overran the whole of the Morea. That turn of fortune which he had so often been the instrument to inflict on others, was now at hand for himself. The Tartar empire of Tamerlane had reached the banks of the Euphrates, mutual jealousies had sprung up, and from mutual aggressions they came to an open rupture. The empire of western and central Asia was the stake at issue. The 2 conquerors met on the plains of Angora with armies of incredible size, in which the preponderance of numbers seems to have been on the side of Tamerlane. Bajazet was totally defeated and taken prisoner, and, according to general belief, was kept in an iron cage and carried about until his death. On account of the rapidity of his movements Bajazet was called Ilderim, the lightning. He was succeeded by Mohammed I. II. Ottoman sultan, son of Mohammed II., born A. D. 1447, died 1512. On his father's death his brother Zizim disputed the succession. He was defeated, however, and fled to Egypt, and afterward to Rhodes, whence D'Aubusson the grand master sent him to France. The unfortunate Zizim was kept some time in France, and negotiations for his surrender having been opened by Bajazet, he was transferred to the custody of Alexander VI., who is reputed to have sold the life of his prisoner to Bajazet for a large sum of money, and to have poisoned the Turkish prince. Bajazet was continually engaged in war, with varying success, against the Venetians, the Egyptians, and the Persians. His reign was brought to a close by the civil war of 8 of his sons, claimants of the throne, in which Selim was at last successful, and Bajazet

abdicated in his favor a short time before his death. During the reign of Bajazet II. the Venetians obtained the right to appoint a consul at the Sublime Porte, and treaties were concluded with Poland and the czar of Muscovy.

BAJIBO, or *BAJIBEBO*, old and new, 2 towns of western Africa, on the Niger, opposite each other, about 47 miles below Boossa, the point where the traveller Park was killed.

BAJOOR, or *BAJOUR*, a district of northern Afghanistan, lat. 85° N., and between long. 71° and 73° E., bordered on the north by the territories of Kafiristan and Chitral. Area 370 sq. miles. It is a plain, with good soil, enclosed by mountains capped with oak and cedar forests. Pop. 120,000.—Also the name of the capital of this district, 180 miles N. E. of Cabool, and supposed to be the ancient Bazira; pop. 5,000.

BAKAOZ, THOMAS, the son of a Hungarian peasant, died 1521, who became secretary of the Hungarian king, Matthias Corvinus, and was ennobled by him. After the death of his benefactor he went over to the party of Queen Beatrix, and promoted the election of Vladislaus II. of Poland to the Hungarian throne. In 1505 he was made a cardinal primate of Hungary, and papal legate. In 1518 he preached a crusade against the Turks. The troops when collected turned their arms against the Magyar nobility, and a civil instead of a foreign war was the result. Bakacz died very rich. His nephew was the founder of the noble families Erdödi and Palli.

BAKALAHARI, the name of the oldest of the African Bechuana tribes. They reside in the tract of country from the Orange river, lat. 29° S. to Lake Ngami in the north, and from about long. 24° to near the west coast, which from its scarcity of water is called the Great Kalahari desert, although it is not destitute of vegetation, and abounds even in a certain class of antelopes, which require little water. The Bakalahari, driven to this desert by persecutions, are found here roaming together with these antelopes, and with the bushmen, who are supposed to be the aborigines of southern Africa. Notwithstanding their long associations with the bushmen and with the other wild characteristics of desert life, we find the agricultural and industrial disposition for which the Bechuana tribes are generally distinguished, still prevalent among the Bakalahari. They attend to the cultivation of the soil which rarely grants more than a supply of melons or pumpkins. They display the same patience in the rearing of goats. They support themselves by the chase, and exchange the skins of lions, leopards, panthers, hyenas, and of other animals which they kill for supplies of arms, instruments, tobacco, &c. This barter trade they generally carry on with leading personages of neighboring Bechuana tribes. Some of the most remarkable skins which they thus bring into the fur markets of the world are those of small carnivora of the feline species, including the dark and the golden jackal, the former

yielding a warm, and the latter a very handsome fur. They are feeble and timid, and live in constant dread of stronger tribes. One of the most entertaining scenes in their home-life is presented by the ingenious manner with which the Bakalahari women or female water-suckers fill their egg-shells and water-skins at a pool in the desert. They carry 20 or more of these water vessels, which consist of ostrich eggshells in a bag or net on their backs. At the end of each shell is a hole of the size of a finger. The women tie a bunch of grass to one end of a reed about 2 feet long, and insert it in a hole which they dig as deep as the arm will reach. The next process is to ram down the wet sand firmly round it. By applying the mouth to the free end of the reed, they form a vacuum in the grass beneath, in which the water collects, and in a short time rises into the mouth. An egg-shell is placed on the ground alongside the reed, some inches below the mouth of the sucker. A straw guides the water into the hole of the vessel, as she draws mouthful after mouthful from below. The water is made to pass along the outside, not through the straw. The whole stock of water is thus passed through the woman's mouth as a pump, and, when taken home, is carefully buried like a precious treasure to be drawn forth on rare occasions, water being to those poor tribes of the desert of Kahara, what manna was to the children of Israel in the wilderness of Arabia. (See Livingstone's "Travels and Researches in South Africa.")

BAKE, JAM, a Dutch philologist, born at Leyden, Sept. 1, 1787. He was educated under Wyttienbach, and in 1817 became professor of Greek and Roman literature in his native city. Here he edited and published valuable editions of Posidonius, and of the astronomer Cleomedes, and assisted in the large and original work entitled *Bibliotheca Critica Nova*. He also published a series of philological articles marked by great learning and acuteness, and written in a Latin style of very unusual purity. He has since edited some of the works of Cicero, and published an excellent discourse upon the Greek tragedians.

BAKEL, a large and well-built village on the Senegal, western Africa. The French have a fortified factory here and a garrison of about 50 negro troops.

BAKER, a south-western county of Georgia, having a level surface, a fertile soil, and an area of about 1,400 sq. m. The principal streams are Flint river, which intersects it and is navigable by steamboats, and Ichawaynochaway creek, which furnishes good water power. The staples are cotton, corn, sugar, and potatoes. In 1850, the productions amounted to 8,820 bales of cotton, 284,595 bushels of Indian corn, 80,170 of sweet potatoes, and 669 hogheads of sugar. There were 20 churches, 1 newspaper office, and 250 pupils attending public schools. The county was organized in 1825, and named in honor of Col. John Baker, an officer of the revolution. Capital, Newton. Value of real estate in 1856,

\$1,414,818. Pop. in 1855, 11,735, of whom 5,588 were slaves.

BAKER, CHARLES, superintendent of the Yorkshire institution for the deaf and dumb, at Doncaster, England, was elected to that post at the opening of the institution in 1829, and has placed it in the first rank of institutions for the deaf and dumb in England. Mr. Baker has distinguished himself as a writer on philanthropic subjects. His contributions to the "Penny Cyclopædia" in 1835, on the deaf and dumb, and blind, and to the publications of the society for the diffusion of useful knowledge, were some years since collected into a volume of great value to those who are interested in the instruction of either class. He has also achieved a high reputation for his efforts in the promotion of general education in England. The Doncaster institution had, in 1852, 110 pupils.

BAKER, DAVID, or **AUGUSTINE**, an English Benedictine monk, born at Abergavenny, in 1575, died in 1641. He was educated at Oxford, studied the law, and was successful in its practice. But on a certain occasion he was in such imminent danger of being drowned, and his escape was so unlooked-for and extraordinary, that he did not hesitate to ascribe it to supernatural agency. It was, in his opinion, a call to repentance. He determined, therefore, to renounce at once the pomps and vanities of this world, and to devote himself to the service of his Saviour and master. Bidding farewell, accordingly, to his profession and his native town, he proceeded direct to London, where he joined a small society of Benedictines, then on their way to Italy. In Italy he was regularly admitted into the order, on which occasion he dropt his baptismal name of David, and assumed that of Augustine. After some time he came back to England, and sojourned there for the next 7 years. Then, passing over to the continent, he settled at Cambray, and became confessor to the English Benedictine nuns, established in that city. He spent almost the whole of his latter life in Cambray, but he ultimately returned to England, where he died. He wrote several devotional works, some of which were published in part after his death.

BAKER, HENRY, an eminent botanist and microscopist, was born in Fleet street, London, in 1708. He was brought up to the bookselling business, but soon abandoned it for more congenial pursuits. His experiments with the microscope were very extensive, and his observations of great value. He devoted much of his leisure time to botany, and introduced into England several valuable exotic plants; among others, the large alpine strawberry, the seed of which he received from Turin, and the *rheum palmatum*, or true rhubarb, which he obtained from Russia. The name of Henry Baker, however, will be longest remembered for his labors in the instruction of the deaf and dumb. Whether he was cognizant of the labors of Wallis, Holden, and Dalgarno, is uncertain, but he established a school in which he instructed the

deaf mute children of wealthy parents, and also those who stammered. The deaf mutes he taught as did Wallis and Holden, to articulate. It is said that he acquired a fortune in this business. Mr. T. Braidwood, who commenced a school for the deaf and dumb in Edinburgh in 1760, is said to have acquired his process. Mr. Baker died in the Strand, Nov. 25, 1774, in his 71st year. His microscopical observations, and his communications to the royal and anti-quarian societies, of both which he was an active and valuable member, have been published.

BAKER, SIR JOHN, an English statesman who flourished in the 16th century; he died in 1586. In 1536 he was attached to a special embassy which was sent to Denmark. He was subsequently elected speaker of the house of commons, of which he must have been previously a member; next he was appointed attorney-general and sworn a privy councillor. Lastly, he was in 1545 made chancellor of the exchequer. In all these high stations he discharged his duties with honesty and ability. He was the only privy councillor that had the courage to refuse his signature to the bill by which Edward VI. sought to exclude his sisters Mary and Elizabeth from the throne.

BAKER, OSMAN C., an American clergyman, bishop of the Methodist Episcopal church, born at Marlow, in New Hampshire, in 1812. He was licensed as a preacher in 1830, and the same year entered a college in Indiana. After 8 years' residence in the college, he was elected a teacher in a seminary at Newbury, Vermont, where he remained till 1844. He then devoted himself for 3 years to preaching, till in 1847 he became professor in the Methodist general Biblical institute, a position which he still holds. He has been twice delegate to the general conference, and was elected to the office of bishop in 1852.

BAKER, SIR RICHARD, author of the "Chronicle of the Kings of England," born in Kent in 1568, died in the Fleet prison, Feb. 18, 1644. In 1603 he was knighted by James I. In 1620 he was high sheriff of Oxfordshire, where he appears to have then possessed considerable property. But misfortunes came upon him. Having made himself responsible for the debts of certain members of his wife's family, all his property became the prey of their creditors, and the consequence was that when over 50 years of age, he had to take up his pen and work for bread. He became in time the author of numerous works, the most important and best known of which is his "Chronicle of the Kings of England," published in London in 1641.

BAKER, THOMAS, an English mathematician, born at Ilton, in Somersetshire, in 1625, died in 1690. He was a clergyman, and spent the greater part of his life engaged in mathematical pursuits, and the discharge of his sacred duties. He made many discoveries in geometry and algebra.

BAKER, THOMAS, an English antiquary, born in the bishopric of Durham, in 1656, died July 2, 1740. He was educated at Cambridge, ordained a priest in 1685, and was soon after appointed a preacher to the university. The bishop of Durham made him his chaplain, but they did not long remain friends. The bishop was particularly anxious that King James' declaration in favor of toleration should be publicly read in all his churches. Baker would neither read it himself nor suffer his curate to read it. His patron took offence at this contumacy, but this was only the beginning of Baker's troubles. Refusing soon after to take the oath of allegiance and supremacy prescribed by the revolutionary government he was ejected from his benefice, and constrained to seek refuge at Cambridge. In 1716 even his fellowship was taken from him, and he was left in his latter days without any means of support, save an annuity of £40, £30 a year which his elder brother allowed him, and the precarious fees which he might earn as a teacher. He now devoted himself to the study of antiquities, but his collections have never been published. He wrote "Reflections on the Insufficiency of Learning and the Utility of Revelation."

BAKER'S FALLS, Sandy Hill township, Washington county, New York, is a place where the Hudson river descends 70 feet in about 100 rods.

BAKEWELL, a market town and parish of Derbyshire, England, situated on the river Wye, near its junction with the Derwent. The town lies chiefly in a valley, and on one side of a hill, about 8 miles from Matlock. It has 4 principal streets, tolerably clean, paved, and lighted with gas, is well supplied with water, and contains many substantial stone residences. The most notable of the public edifices are a fine old Gothic church, with monuments of some interest, and one or two chapels of various denominations. There are several schools, a mechanics' institute, a dispensary, a clothing society, and in the vicinity a cotton mill. The inhabitants are employed chiefly in marble-cutting, in the coal and lead mines, and in the cotton manufacture. Bakewell has chalybeate springs, which were formerly much frequented, and have recently been reopened by the duke of Rutland, whose residence, Haddon hall, is about 2 miles from the town. Chatsworth, the seat of the duke of Devonshire, is in this parish. Pop. in 1851, 9,897.

BAKEWELL, ROBERT, English agriculturist, born in 1725, at Dishley, in Leicestershire, died in 1795. He succeeded his father, in 1760, as occupier of the Dishley farm, and then commenced experiments for the improvement of cattle (introducing the celebrated long-horned breed), and also of horses, pigs, and sheep. One of his rams, called the two pounder, was sold for the enormous price of 1,000 guineas. His sheep and horned cattle were noted for the fineness of their bones and flesh, the lightness of their offal, their disposition to quietness, and

consequently, to mature and fatten with less food than animals of the same species of equal weight and size. It was objected of his stock, that "they were too dear for any one to purchase, and too fat for any one to eat." Indeed, it is only of late years that this over-obesity has ceased to be considered the great qualification for premiums at cattle shows. Mr. Bakewell introduced into English agriculture the practice of flooding meadows. He never contributed anything to literature, but Arthur Young, in his annals of agriculture, fully described and praised his plans and improvements.

BAKHTOHISSARAI, a Tartar town of Russia in the government of Taurida; pop. 10,000. It is situated on the Toboorook, 15 miles S. W. of Simferopol. It consists of a single street, built along the banks of the Toboorook, and lined in oriental fashion with bazaars and workshops in which the Tartar toils as his ancestor toiled two centuries back. It contains also several mosques, which are generally embosomed in trees, and whose tall minarets rise high above the contiguous houses. Here, too, is still to be seen the ancient palace of the khans who ruled over the Tauridian state before the rise of Russian power. This edifice is even yet in good repair, and presents a most singular appearance. It exhibits all the irregularity of an eastern mansion, but its spacious galleries, brilliant paintings, and airy pavilions, produce an effect on the spectator not often produced by symmetrical structures. Bakhtohissarai first became the residence of the khans in 1475. In the 16th century their dominions extended not only over the Crimean peninsula, but over all the outlying territory from the Danube to the Caucasus. Gradually, however, the arms and intrigues of Russia undermined their authority, until, in 1783, it became utterly extinct, and what then remained of their country was annexed to the empire of the czars. The inhabitants of Bakhtohissarai are chiefly Tartars.

BAKHTEGAN, a lake in Persia, 50 miles east of Sheeraz. Its extent east and west is 60 miles; breadth 8 miles. It is made to yield a large quantity of salt.

BAKHTEYARI, a range of mountains in S.W. Persia, opposite to the Rocky ranges Ava and Laristan: the greatest height is 1,000 feet.

BAKHTISHWA, the name of a Christian Nestorian family, celebrated for the many eminent physicians which it has produced. During the 8th, 9th, 10th, and 11th centuries, there were not less than 6 physicians of the same family, who all flourished at the court of Bagdad, and acquired more or less distinction in their profession. The professional difficulties in those days were of a peculiar character. The physician of the court who did not succeed in restoring health to his royal patient, stood in danger of his life. Caliph Al Hadi, for instance, after having been restored to health by the skill of Ben Giurgis Bakhtishwa, who lived in the 9th half of the 8th century, proposed that all the other physicians who had unsuccessfully practised

ed upon him should die, and Bakhtishwa could only save the lives of his colleagues by administering poison to the caliph, from which he died. Another case in point occurred at the beginning of the 9th century, in the instance of Giabril ben Giurgis ben Bakhtishwa, who was doomed to die by Haroun al Rashid, because this distinguished caliph had a relapse of an apoplectic fit, and accused the physician, who had helped him over the original fit, of having treacherously concocted the fatal relapse. His life was only saved by the death of the caliph, which fortunately took place before he could carry out his design. The most learned of the Bakhtishwas was Abu Sa, who flourished in the 2d half of the 10th century. He is the reputed author of a medical work in 50 chapters, dedicated to Caliph Motaki, and entitled *Al-Bandat Altabiat (Hortus Medicina)*.

BAKING MACHINERY. Bread is the staple of life among all civilized nations, and on the European continent is nearly the only solid food of the peasantry of large provinces. For this reason many inventions have been made in every country to improve and cheapen its manufacture, only 2 of which have thus far been successful; they are those of Hiram Berdan of New York, and of L. F. Rolland of France. For a more ample exposition of the theory of bread making, see the article **BREAD**. Here a few of the principal points will alone be given. The yeast causes the fermentation of the dough, that is, the transformation of starch into carbonic acid and alcohol. The temperature necessary to cook bread must be at least 212° F., and to raise the loaf well, form a good crust, and bake it thoroughly, a steady heat of about 400° is required. Bread may be made without crust by maintaining the temperature at 212° , but it will also be destitute of the much-esteemed fibrous texture, and will not undergo the chemical change necessary to make it wholesome, by an intimate union of the water with the constituents of the flour. The crust is more soluble than the inside, and is much more easily digested.—BERDAN'S MACHINERY was established in Brooklyn in Dec. 1856, and was destroyed by fire in May following. A large bakery has since been erected on his plan in Philadelphia, capable of converting several hundred barrels of flour into bread daily. The building is 4 stories high. There are 2 ovens 30 feet high, 24 feet long, and 10 feet wide, passing up from the basement into the 2d story. They are heated by ordinary coal furnaces underneath, through cast-iron arches which form the bottoms of the ovens, and fire-brick flues which run up the sides and carry off the smoke to the chimney. The heat is thus radiated into a close chamber. The temperature is regulated by dampers, moved by iron rods, which close and open them by expansion or contraction under different degrees of heat. Within the oven are 3 endless vertical chains supporting 26 cars or trays containing the bread. The chains move slowly round, so that the cars move up-

ward on one side of the oven and downward on the other. Each oven has 4 doors, 2 on the 1st and 2 on the 2d story. On the side where the chains move upward, the cars containing the bread enter the oven through the lower door, and are delivered at the upper door; the reverse is done on the other side. These bread cars are made of a cast-iron frame floored with tiles $1\frac{1}{2}$ inch thick, on which the unbaked loaves are placed. The car being charged with loaves by hand, the door of the oven opens mechanically, an iron arm comes out, pulls in the car on rail-tracks, and the door closes. When the car arrives opposite the other door the bread is baked; this door opens, the car is pushed out by an iron arm, the loaves are dumped from it into baskets, and the car moves on a track to the front of the other door, where the attendants stand ready to load it with new loaves. The machine for kneading the dough is a large horizontal cylinder 10 feet long and 6 feet in diameter. At each end of the cylinder are 2 disks of nearly the same diameter, hung on the inside ends of 2 short shafts. These disks are united near their circumference by 2 longitudinal bars on opposite sides. At each revolution the 2 bars are forced through the dough which they knead, while a broad flapper, hung on the 2 disks eccentrically, or out of the centre, carries it up and lets it fall upon the lower part of the cylinder. Eight barrels of flour are kneaded in 15 minutes by this machine, all the working parts of which in contact with the dough are sheathed with zinc. The dough is made into loaves in another machine called the loaf cutter. This consists of a vertical zinc cylinder in which the dough is placed and pressed down by a piston acted upon by a screw. The dough thus compressed escapes through 8 holes in the bottom of the cylinder. These holes are round, and encircled by knives, which at equal intervals of time cut off the dough, which has been pressed into corresponding cavities in a zinc roller placed immediately under the cylinder. These rollers have, like the knife, an intermittent motion, and each time a row of 8 recesses is filled an empty row is brought under. The pieces of dough are discharged on reaching the lower part by means of pistons working by an eccentric movement in the cavities. They fall upon an endless apron, which conveys them to the moulding-table, where they are put into shape. They are all of equal weight, according to adjustment. A register is attached to the roller of the last-described machine, to record the number of loaves produced.—ROLLAND'S MACHINERY consists of a mechanical kneader and a rotary oven. It is now common in France and Belgium, and there is one in operation in New York. The kneader is a half cylindrical trough, in which a shaft bearing 2 opposite rows of projecting arms, 4 inches apart, is made to revolve. The ends of the arms are united by a flat bar parallel to the shaft, which scrapes the bottom of the trough at each revolution, and

prevents any portion of the dough from adhering to it. From this bar a number of shorter arms, directed toward the centre of the shaft, reach only half the distance to it. The dough is placed in the trough and the shaft is turned slowly, at the rate of 4 or 5 revolutions per minute; a greater velocity breaks the dough instead of kneading it. With this instrument a man of average strength kneads easily 8 barrels of flour in 30 minutes, and the saving on the hand process is calculated to be 75 per cent. The most important feature of the oven is a circular horizontal platform mounted on the top of a vertical shaft which is free to revolve. This platform is 12 feet in diameter; it is made of iron covered with tiles, on which are placed the loaves to be baked. It is inclosed in a cylindrical room of brick walls, with a ceiling of iron, over which, at a short distance, is a floor of the same metal, covered with a thick bed of sand. A small grate, 8 feet by 1½, is built in the walls; the flames of this furnace circulate in 8 cast-iron pipes, placed in the vacant space below the platform, and rise in a vertical flue in the wall, passing between the 2 iron floors and escaping into the chimney-pipe. The door of the oven is very low, so as to allow as little steam as possible to escape when it is open, it being shown by experience that a moist heat gives a whiter and better bread than a dry heat. Near the door is a crank, by means of which the attendant turns the platform and brings which side he pleases near the door, and the loaves are put in and taken out in the usual manner. The fuel used is coal. It is claimed that there is an economy of 50 per cent. on this combustible, and 80 per cent. on labor, with a gain in the quality and weight of the bread; and, moreover, that the oven is always ready to bake, so that, with one of this sort, nearly as much work can be done as with two built on the common plan.

BAKONY-WALD (*i. e.* Forest of Bakony), a mountain range in Hungary, between the Raab and Lake Balaton, and which separates the great and little Hungarian plains. Average elevation, 2,000 feet. It is crowned with lofty forests, and has quarries of very fine marble.

BAKOO, **Baku**, or **BACHU**, a Russian walled town, population in 1857, 5418, in Georgia, upon the Caspian sea. The rocky peninsula upon which it is built, and the islands in the bay, are composed of tertiary strata, abounding in fossil shells. Through these strata numerous springs of naphtha and petroleum issue, together with streams of inflammable gas, and eruptions of mud from so-called mud volcanoes. These phenomena give to the region the name of the Field of Fire, and formerly made Bakoo the sacred city of the Guebres or Fire Worshipers. Bakoo has also been called the Paradise of Roses. The naphtha is so abundant that it is an article of commerce. It is obtained of two qualities, one a colorless thin fluid, which marks 18.66° in the areometer; and a poorer quality (petroleum) thick and tenacious. It is said that the

annual value of the naphtha sold to the Persians is about \$300,000. About 15 miles N. E. from Bakoo, is a jet of inflammable gas issuing from the calcareous rocks, which is worshipped by those of the Asiatic tribes living in the region, and also by pilgrims from distant parts of Asia, who come to pay their devotions to the divine principle of fire; and there is a numerous priesthood supported by the gifts of these strangers. The gas once inflamed continues to burn, and is called the perpetual fire; it is said to be without smell, and inoffensive to breathe, both which statements may be regarded with doubt; it burns with a yellowish white flame, and explodes when mixed with atmospheric air, which are properties of carburetted hydrogen gas. Beside the commerce in naphtha, Bakoo exports also large quantities of salt, which also is bought by the Persians. This is obtained from the salt lakes of Massassir and Sich. The former, of three miles in length and a mile and a half wide, affords every summer 5,400,000 lbs. avo. of salt, which quantity could be more than doubled. The latter is only a mile long and two-thirds of a mile wide. The salt collects in a layer upon the bottom of it. About 720,000 lbs. are annually collected, which is said to be not one-tenth part of the quantity that might be obtained. These two lakes yield about one-half of all the salt that is collected from all the lakes of the neighborhood. The other products of the region are saffron, madder, and silk.

BAKOUNINE, **Michel**, a Russian democrat and revolutionist, born in 1814, in Torjok, a district town in the government of Tver in Russia. His name became prominent during the agitations before and after 1848. He was educated in a military school at St. Petersburg, served in the artillery of the guards, but soon resigned his commission. In 1841, he went to Berlin to study philosophy; in 1842, he went to Dresden, continuing his studies in intimacy with Ruge. There he published a philosophical treatise, under the name of Julius Elysard. From Dresden, in 1843, he went to Paris, and entered into relations with the Polish emigration. Shortly afterward he went to Zurich, in Switzerland, where he participated actively in various socialist and communist associations, and became personally acquainted with prominent individuals of various nations who shared the same convictions. In this way he became intimate with Vogt, the celebrated philosopher, materialist, naturalist, and revolutionist. The Russian government ordered him to return home. Bakounine refused, and his estate was confiscated. This act of the Emperor Nicholas conferred on Bakounine the palm of a martyr. In 1843, he returned to Paris, and became the pet of all the revolutionary parties, including the leaders of the French opposition, and belonged to the corps of writers in the *Reforme*, a daily journal conducted by M. Flocon. In 1847, during the excitement produced in Paris by the question of parliamentary reform, and of the banquets, Bakounine, at one of them,

made a speech invoking the fusion of Poles and Russians, for the better and easier revolutionizing of Russia. This speech, which was reproduced by various continental journals, made so great a sensation, that the Russian government demanded from Louis Philippe Bakounine's expulsion from France. He retired to Brussels, and an unfounded story was then spread that the Russian government offered a purse of \$6,000 or \$7,000 for his extradition. The revolution of February recalled him to Paris, where his intimate friends, Flocon, Ledru-Rollin, Louis Blanc, Causidière, and Stephen Arago, were in power. Relying on their support, he went to Prague in Bohemia, with the intention of revolutionizing the various tribes of the Slavic family, and thus facilitating the influx of new ideas and shaking Russia. In Prague he took part in the famous Slavic congress, and in the bloody street fight which ensued, at the end of which he escaped to Berlin, where he became prominent in all the democratic movements. Expelled from the Prussian territory, he went to Dresden, and when residence there was denied him, he betook himself to Dessau and Köthen, always actively engaged in the fermentations then going on. The bloody outbreak of Dresden in May, 1849, was almost wholly combined and directed by him. After the overthrow of the revolutionary party by Prussian bayonets, he escaped to Chemnitz, where he was arrested on the night of May 9. He was imprisoned in the fortress of Königstein for nearly 8 months, and condemned to death in May, 1850. This penalty was commuted to imprisonment for life, but shortly afterward Saxony delivered him to Austria, which had claimed him on account of his act at Prague. In Austria, in May, 1851, he was again condemned to death by a court-martial, and this verdict was again commuted to imprisonment for life, when Russia interfered with her rights of maternity over the victim. He was delivered to her, and imprisoned, as it is supposed, in the dungeons of the fortress of Schlüsselburg, where he is generally believed to have died.

BAKWAINS, one of the most southern of the Bechuana tribes in the southern part of Africa. They have recently declined in power, and been unsuccessful in their wars against the neighboring Dutch settlers; and even the rivers, which are said to have formerly supplied the pastures for their fine herds of cattle, are now dry. The Bakwains are described by Dr. Livingstone as subject to few diseases, the principal being those occasioned by sudden changes of temperature, as pneumonia and rheumatism. It was said to him, by intelligent converted Bakwains, that nothing which Christians denounce as sin ever appeared to them as otherwise, except the privilege of having more wives than one; and they declared that before they knew the white men they spoke in the same way as now concerning the influence of God in giving rain in answer to the prayers of rain-makers, and in granting deliverances in time of

danger. They have no forms of prayer or public worship, and though they possess a notion of the Deity and of a future state, they yet show so little reverence that some have supposed them utterly ignorant upon those subjects.

BALA, a town of north Wales, at the N. end of the Bala lake, county of Merionette. It has 5 fairs annually, chiefly for the sale of live stock. The town and its neighborhood have long been famous for the manufacture of knitted stockings, and gloves of strong and soft texture. At the south end of the town is a large artificial mound, supposed to be of Roman origin. This mound was anciently occupied by the Welsh as a fort to prevent the incursions of the English.

BALAAM, a person who appears but briefly on the page of Biblical history, but in that short career presents phenomena which, on a superficial observation, seem to be incompatible with each other. Balaam was the son of Beor, and a native of Pethor. His name means either "the lord of the people," or the "destroyer of the people." The children of Israel had reached, in their journey, the plains of Moab. Balak, the king, was terrified at seeing so great a host invading his territory. They were too mighty for him. He sent, therefore, to Balaam, a well-known prophet and soothsayer, to come and curse these hosts for him, so that, peradventure, he might then smite them and drive them out of the land. Balaam, warned of God in the night, refused to go with the messengers, and sent them away. Balak sent yet others. He at first also refused them, but in the morning he went, with the divine injunction to speak what the Lord should tell him. The angel of the Lord met him in the way, gave the ass he rode a vision in 3 several instances, and each time Balaam angrily smote the beast for her involuntary manifestations of terror. After the third beating an interlocution ensues between the ass and the master, when the Lord opened the eyes of Balaam, and, seeing the angel, he converses with him instead of the ass. As the result of the conversation, Balaam is permitted to go on, and the charge repeated to speak only that which the Lord should tell him. Coming unto Balak, he informs him that he can only speak that which God shall put into his mouth. Balaam refuses to curse Israel, but pronounces a blessing upon them, in the 3 several places to which Balak brought him in the vain hope of securing his purpose. This completes the Old Testament history of the transaction. The New Testament makes reference to it (2 Pet. ii. 15, Jude 11, Rev. ii. 14), in which Balaam is accused of error and of advising Balak to lead the children of Israel into idolatry, which, according to his directions, they did, and hence arose a war with Moab.

BALABAO, an island lying in Balabao straits, between Borneo and Palawan. Its highest peak is lat. 8° N., long. 117° 7' E. Length, 15 miles; breadth, 10; area, 504 sq. m.

It is claimed as a possession of the sultan of Sooloo; and by reason of its inhabitants partaking of the same piratical character with all the semi-barbarous Malay tribes inhabiting the islands that border on the sea of Mindoro, no communication has been held with them by Europeans, and we have no precise information about the island. There is a safe roadstead, in a bay called Dalawan, on the eastern side.

BALA-BAGH, a fortified town of Afghanistan, famous for its fruits. Near it are numerous mounds, supposed to be of Buddhist origin.

BALABALAGA, or **BALABALAKAN**, also called Little Paternosters, a group of 48 islets, and numerous rocky points, in the straits of Macassar, between Borneo and Celebes; area of the group, 115 sq. m. But little is known of them; they have no permanent population, but are visited by the roving Bajaus or seagypsies of the Indian seas, for the purpose of fishing; and the group has often, in times past, afforded shelter for the preparation of piratical expeditions.

BALACHONG, a condiment made of shrimps, various small fish, shredded coconuts, and tender bamboo sprouts, well pounded and pickled, by a long process, which is much used by all the people of the Malay archipelago, and to a considerable extent by the people of south-eastern Asia. The Greeks and Romans made use of a condiment called *garum*, which was made of a Mediterranean fish; and it is somewhat singular that the principal fish used in the preparation of balachong is found in Sumatran rivers, and called in Malay, *ikan-guramee*. This article is called *trasse* in Java, and *bugon* in the Philippines.

BALAGHAUTS, a district of Hindostan, in the central plateau of the Mysore country. It extends from the river Krishna to the river Kaveri; area, 25,500 sq. m. The surface is hill and valley. The soil is fertile. It produces indigo, sugar, cotton, tobacco, betel, and red pepper. It sustains large numbers of cattle, sheep, and goats. The central and eastern districts have diamond mines. The term Balaghauts is now restricted to those parts of this vast extent of table-land called the ooded districts. The entire district formed the ancient Hindoo empire of Karnata. Hyder Ali added it to his dominions. It is now a part of the presidency of Madras.

BALAKHNA, a town of Russia, on the right bank of the Volga, where it unites with the Oosla. It contains 15 churches and a convent, and has considerable trade in grain.

BALAKLAVA, a harbor and small seaport village used as the British landing-place in the war in the Crimea. It is situated in the south side of the Heracleotic Chersonesus, and is the last and south-easternmost of those singular natural harbors, scooped out of the steep rocky cliffs of this portion of the Crimea. The first of these is the harbor of Sebastopol, from the head of which Balaklava lies due south in a nearly direct line, that line forming the isth-

mus, as it were, of the Heracleotic Chersonesus, and nearly coinciding with the naturally formed escarpments which bound the plateau of Sebastopol, and descend thence, more or less precipitously, into the valley of the Tchernaya, the easiest point of ascent being immediately above the port.—The name of Balaklava is said to be derived from the Italian words *bella chiosa*, beautiful quay or harbor, given to it by the Genoese, who had many settlements, during the middle ages, on the Crimea, and who built a strong and capacious castle, the ruins of which yet stand on the precipitous cliffs towering to the right hand, and command the mouth of the harbor. It is thus described, as first seen from the inland approach, by Mr. Russell, the spirited and graphic correspondent of the "London Times:" "He was a bold mariner who first ventured in here, and keen-eyed, too. I was never more astonished in my life than when I halted on the top of one of the numerous hills of which this portion of the Crimea is composed, and, looking down, saw under my feet a little pond compressed by the sides of rocky mountains; on it floated some 6 or 7 English ships, for which exit seemed quite hopeless. The bay is like a Highland tarn, and it is long ere the eye admits that it is half a mile in length from the sea, and varies from 250 to 120 yards in breadth. The shores are so precipitous that they shut out, as it were, the expanse of the harbor, and make it appear much smaller than it really is. Toward the sea the cliffs close up, and completely overlap the narrow channel which leads to the haven, so that it is quite invisible. On the south-east of the poor village which struggles for existence between the base of the rocky hills and the margin of the sea, there are the extensive ruins of a Genoese fort, built some 200 feet above the water. It must once have been a large and important position; and its curtains, bastions, towers, and walls, all destroyed and crumbling in decay as they are, evince the spirit and enterprise of the hardy seamen who penetrated these classic recesses so many years ago."—The place is, however, most famous for what is known as the battle of Balaklava, in Oct. 1854.—Across the little plain above the gorge 4 little earthen redoubts had been thrown up, and confided to small Turkish detachments, for the defence of the outposts from a Russian attack. They were ill-constructed, too far from one another, and too far from their supports. Accordingly, Oct. 25, at 7 o'clock in the morning, the alarm was given that the enemy were debouching in great force by the gorges of the Tchernaya into the valley of Balaklava. Six compact masses of Russian infantry were at once seen descending, with a regular line of at least 20 pieces of artillery in their front. In front of these, again, were 3 batteries of light field-pieces, supported, immediately behind the guns, by 6 compact squares of Russian cavalry, 8 on each flank. Before the allies could support them in force, the redoubts were carried, one by one, the Turks

making but a feeble resistance and flying to the protection of the 98d Highlanders, who were drawn up on the slope of the hill under the command of Sir Colin Campbell. Here they rallied and formed in companies on the flanks of the Highlanders. The victorious cavalry came on in 2 bodies *en echelon*, with a third in reserve, at least 1,500 strong, and rode right at the Highlanders. At 800 yards the Turks fired a random volley and fled. At 600 the Highlanders gave them a rolling fire of Minié rifles, which, though it emptied many saddles, failed to check the onset. When the horse were within 150 yards of "the thin red streak topped with a line of steel," the second volley ran along their front, and the Russians, unable to endure the fire, opened their files, right and left, and fled. It was only when the suspense was over that the whole British army, who were spectators from the heights above, observed that the Highlanders had repulsed horse in the ordinary British line, 2 deep. Almost at the same moment, in another lap of the valley separated by a ridge of high ground from the scene of that encounter, another great mass of Russian horse, hussars, lancers, and dragoons, came suddenly on the English heavy cavalry brigade, under Gen. Scarlett, consisting of the Scotch Greys and Enniskillen dragoons, in the first line, and the 1st royals and 4th and 5th dragoon guards in the second. The Russian lines were double the length, and treble the depth of those formed by the handful of English; and, when the trumpets sounded, and the Greys and Enniskilleners rushed at them, with a tremendous cheer, they brought forward both their wings, as if to envelop them, but the British horse went through them, as if they had been lines of pasteboard; and, just as they were closing with the second line, the royals and dragoon guards dashed at the remnant of the first line, shattered it in an instant, and, plunging into the second, while it was disordered by the first shock, completed its rout. But the great event—though it was both a blunder and a disaster—was the charge of the light brigade. After the repulse of the cavalry by the Highlanders, and their defeat by the heavy brigade, the Russians made no more efforts to advance, but contented themselves with holding the taken redoubts and carrying off the guns with which they were armed. At this moment an order was brought to Lord Lucan, who commanded the handful of horse, not equal in number to an ordinary European regiment, which bore the name of the light brigade, numbering in all about 680 men—hussars, lancers, and light dragoons—to advance. "Advance whither?" was the question. "There is the enemy, sir," was the reply, "and there are the guns." And truly there they were! Six battalions of infantry, 6 solid masses of cavalry, with 80 heavy guns in position, directly in their front; the captured redoubts with their batteries on the right; and the slopes on their left lined with riflemen and

light field-pieces, and a mile and a half to be traversed, under the fire, before they could meet an enemy. Every one knew that there was a blunder somewhere; every one knew that they were ordered to do what was hopeless; that they were ordered to ride upon death; but they did it. They took the guns, cut their way through the infantry supports, cut their way through the cavalry. Nothing stopped them till they reached the banks of the Tchernaya, when they wheeled, 8 about, only to see that they were unsupported and enveloped. Still, they out their way back under the play of the Russian batteries, but with fearfully diminished numbers. A gallant charge of the French *chasseurs d'Afrique*, who carried a battery on the left, and the manœuvring of the heavy brigade, partially extricated them, or rather covered their retreat; and when they reached the ground from which they had started on that headlong charge, the handful of survivors, not above 150 men, wheeled round to face the enemy, dressed up as if on parade, and burst into a cheer of exultation and defiance. The order never has been explained, nor is it known from whom it was issued, or whether, in truth, it was ever given. Capt. Nolan, who delivered it, was the first man who fell. As a military manœuvre, it was useless, insane, and without a possible result. As an exploit, it has never been equalled, even by those related in the wildest legends of chivalric romance.

BALALAIKA, a musical instrument somewhat similar to the guitar, but having only 2 strings. It is used among the Tartars and Russians, and, as Niebuhr informs us, is also common among the Arabs and Egyptians. The instrument is supposed to be of ancient Slavonian origin.

BALAMBANGAN (Malay, palm plank), an island at the entrance of Maloodoo Bay, on the north coast of Borneo; area 90 sq. m., uninhabited. The sultan of Sooloo, who was taken prisoner by the Spaniards in 1763, and held in captivity at Manila, having been liberated by the English, ceded this island to his rescuers as a recompense; and in 1775 it was taken possession of, and garrisoned by the British East India company; but shortly afterward a large body of those pirates that have so long been a terror in the Sooloo sea, harassed the small garrison till they were compelled to abandon the island. It was again garrisoned by a detachment of English troops in 1803, but after a short stay was voluntarily abandoned, on account of the unproductiveness of the soil, and the dangerous character of the neighborhood. Since the establishment of the British settlement at Labuan, 170 miles further south, attention has been again directed to Balambangan, and it has probably received another British garrison by this time. In accordance with the suggestion of Sir Stamford Raffles, a British settlement is to be formed in Borneo, at the bottom of Maloodoo Bay, in connection with the settlement of Balambangan.

BALAMBUANG, a bay, on the east coast of Java, in the straits of Bali, deep and well sheltered, affording excellent anchorage, once a noted resort of shipping, in the times of the old Dutch East India company; but, in consequence of its extreme unhealthiness, this roadstead has been abandoned for that of Banyuwangi, in the same strait.

BALANCE, a word probably derived from the Latin, *valentia*, signifying the value of a thing, and hence applied to the instrument for determining its weight, on which the value most generally depends. Hence, too, its various applications in the sense of equivalent; and also of that which must be added to any thing to make it equivalent to another. The French use the same word for the instrument, and derive it from the Latin words *dis* and *lana*, signifying 2 dishes or pans. Of instruments for weighing bodies the name balance is commonly given only to those used in assaying and chemical analysis, and these represent the most perfect form of the instrument. It is constructed of a light inflexible bar called the beam, which is suspended from a point on a line bisecting it, and from each extremity of which, equally distant from the point of suspension, hangs a pan, in one of which the body to be weighed is placed, and in the other its counterpoise, consisting of bodies of known weight. The instrument is thus nothing more than what is called the lever of the first kind, that is, one in which the fulcrum is between the body to be moved and the power applied. The first object of importance is the position of the fulcrum or turning point of the beam. This may either coincide with the centre of gravity of the beam, or be a little above it, on the same vertical line. In the former case, or if placed below it, the slightest inequality of weight would cause the beam to preponderate on one side and not return, or, what is called, upset; this is entirely inconsistent with the property of stability, essential to all good balances, which is the tendency of the beam, when disturbed from its position, to return toward it, and oscillate about its point of rest. If, on the contrary, the point of suspension is a little above the centre of gravity, and the beam is then impelled in either direction, it will tend to return, and will continue vibrating for some time in arcs continually growing less, till it comes to rest; and, further, the inequality of the weights upon the 2 arms continuing the same, the less the distance the point of suspension is above the centre of gravity, the more inclined from the horizontal will be the beam when this becomes stationary. The nearer the point of suspension is brought to the centre of gravity, the greater is the sensibility of the instrument, or its tendency when loaded and poised to turn on the addition of a very small weight to either scale. But the risk of rendering the balance unstable requires a certain interval to be retained between these points. This interval, however, in the most perfect

instruments, is not constant, but the centre of gravity is made by means of a little weight, that may easily be screwed up or down a vertical index or needle set upon the line of these 2 points, to be brought nearer or removed further from the point of suspension. When the balance is heavily loaded, the stability is increased and the sensibility diminished: the movable ball should then be placed to bring the centres of gravity and motion in closer proximity than when the load is light. The turning point of the beam, in order to reduce the friction to the least amount, is a knife-edge or triangular prism of hardened steel passing at right angles through the beam, and resting, when in use, upon polished plates of agate (one each side of the beam), which are set exactly upon the same horizontal plane. The knife-edge should be polished and brought to an angle of 80° .—The next matter of importance is to fix the situation of the points of suspension of the pans or scales. These bearing surfaces are also knife-edges, one set across each extremity of the beam. They are sometimes made to admit of a slight movement by adjusting screws, so as to increase or diminish the distance from the centre of motion, that they may be made precisely equidistant from this centre. Great care is also required, that the line connecting them is precisely at right angles with the line passing through the centres of motion and of gravity. The nearer their connecting line passes to the former, the greater is the sensibility, other things being the same. The index or pointer is sometimes a long needle, its line passing through the 2 centres, and extending either above or below the beam, or it is a needle extended from each extremity of the beam. In either case it vibrates with the motion of the beam over a graduated arc, and rests upon the zero point when the beam is horizontal. The degrees upon each side of the zero of the scale indicate, as the needle oscillates past them, the intermediate point at which this will stop, thus rendering it unnecessary to wait its coming to rest. In order to save the knife-edges from wear, the beam is made, in delicate balances, to rest, when not in use, upon a forked arm, and the pans upon the floor of the case in which the instrument stands. The agate surfaces being lifted by means of a cam or lever, raise the beam off its supports and put it in action; or the supports, by a similar contrivance, are let down from the beam, leaving it to rest upon the agate; the pans in the latter case must always remain suspended.—The following are proper tests to which a balance should be subjected to determine its qualities: 1. The pillar on which are set the agate or steel faces, being set vertically by the adjusting screws upon the floor to which it is attached, a spirit level should be applied to these planes and turned in every direction, to determine their horizontality. 2. The 2 knife-edges must be examined, to see that they are set at right angles to the line of the beam.

This (without the pans) is next placed upon the agate plates; the needle at rest should fall upon the zero-point; oscillating, the motion should be slow and regular, diminishing equally at each vibration. The beam is then taken off, turned around, and the same observations made. 3. The pans are next suspended to the beam and loaded successively with different weights, and notice taken whether the vibrations are equal on each side; and trial is then made as to how small a weight the balance is sensitive when loaded. 4. The weights producing equilibrium are next changed from one pan to the other, and they should in this change still exactly counterpoise each other.—However perfectly a balance may be made, there is always great care to be exercised in its use. Errors are easily made in the estimation of the nice quantities it is used to determine. The sources of some are avoided by a simple and ingenious method of weighing, suggested by Borda. The body to be weighed is exactly counterpoised, and then taken out of the pan and replaced by known weights, added till they produced the same effect. A false balance must by this method produce correct results. A true balance may be made to give false results by its centre of gravity being brought very near to its centre of motion. A small weight allowed to fall into the empty pan, may then give a sudden impetus to it, causing it to raise a larger weight placed in the other pan, and the beam being then upset and refusing to vibrate, causes the small weight to appear to counterbalance the greater one.—An ingenious form of balance has been contrived by M. Bockoltz, which is provided with only one pan, and to counterpoise the other arm of the beam, a constant weight is required in this pan, which may be made up of the body to be weighed and sufficient known weights beside. The simplicity and cheapness of this apparatus caused it to receive a high recommendation from the *Société d'Encouragement*. In its construction the nice adjustment of the two arms to precisely equal lengths, and of the three knife edges in the same straight line, is rendered unnecessary. It would seem to be an objection to this balance that for the determination of the most minute weights its load must be the same as for the largest quantities; hence it must be deficient in sensibility in estimating very small quantities.—The weights employed for delicate balances are either troy grains, one of each of the units, one of each of the tens, and the same of the hundreds, and thousands, as also of the tenths, hundredths, and thousandths of a grain; or they are the French gramme weights, with their decimal parts. The latter are the most commonly used in chemical assays and analyses. The larger weights are of brass, the smaller of platinum, and these are always handled by means of a pair of forceps. The beam of the balance is frequently marked by divisional lines into tenths, and one of the small weights, as a tenth, or hundredth of a grain, or a milli-

gramme, is bent into the form of a hook, so that it may be moved along the beam to any one of these lines to bring the balance to exact equilibrium. By this arrangement the picking up and trying one weight after another is avoided, and the proportional part of the weight used is that indicated by the decimal number upon the beam, at which it rests to produce equilibrium. The best materials for a balance are those which combine strength with lightness, and are least liable to be affected by the atmosphere and acid vapors. Brass, platinum, or steel, is used for the beam; but probably aluminum will prove to be better adapted for this purpose than either. The pans are commonly of platinum, made very thin, and suspended by fine platinum wires. The support is a brass pillar secured to the floor of the glass case, in which the instrument is kept. Doors are provided in front and at the sides, so that access is had to the instrument, but these are commonly kept closed, and are always shut in delicate weighing, that the beam shall not be disturbed by currents of air. So delicate are the best balances, that when lightly loaded and left to vibrate, they may be affected by the approach of a person to one side of the glass case, the warmth radiated from the body causing the nearest arm of the beam to be slightly expanded and elongated, so as to sensibly preponderate. The degree of sensibility is estimated by the smallest weight in proportion to their load, that will cause the beam to be deflected from a horizontal line. If a balance have 5,000 grains in each pan, and is observed to be moved by the addition of $\frac{1}{100}$ of a grain, it is said to be sensible to the $\frac{1}{500,000}$ of its load. Dr. Ure notices one that was sensibly affected by $\frac{1}{1,000,000}$ of its load.—The steelyard, the Roman *statera*, is one of the forms of the balance, the two arms being of unequal length, the body to be weighed being suspended by a pan, or otherwise, from the short arm, and the counterpoise, which is a constant weight, being slid along the longer arm until equilibrium is established. As this occurs when the weight on one side multiplied by its distance from the fulcrum is equal to the weight on the other multiplied by its distance from the fulcrum, and as on one side the weight is constant, and on the other the distance from the centre of motion, the unknown weights must be determined by the distance of the constant weight from the centre.—The Danish balance differs from the common steelyard in having the counterpoise fixed at one end, and the fulcrum being slid along the graduated beam. The graduation commences at a point near the counterpoise, at which the beam with the pan suspended at the other end is in equilibrium, and the numbers increase toward the pan. A balance called the bent lever is employed to some extent for purposes not requiring extreme accuracy. The pan is attached to one end of the beam and the other carries a constant weight. From the bent form of the

lever this weight is raised to a height varying with the weight placed in the scale pan. A pointer attached to the constant weight and moving along a graduated arc, indicates by the number at which it stops the weight of the body in the scale pan. Its indications are the least to be depended upon when the constant weight approaches to the horizontal or vertical line passing through the centre of motion. The scales generally used in the United States for weighing wagons while loaded, and boats as they pass through the canal lock, are ingenious modifications of the steelyard, wherein the weight of these ponderous bodies is divided by means of levers, and a known fraction of it sustained by one end of a beam, the other end of which is graduated for a moving weight. All the modern modifications of the steelyard contain the additional device of a pan hung at the end of the graduated arm to receive larger weights, while the sliding weight is used only to balance the fraction of parts.—Spring balances are popular instruments, and consist of a helix of wire enclosed in a cylinder. The body to be weighed is suspended to a wire passing up through the centre of the helix and fastened to the upper coil, which carries a pointer down a narrow slit in the cylinder, thus indicating on the graduated sides of the cylinder the weight of the body. None of these contrivances of spring or levers are equal in sensitiveness and accuracy to the best-constructed beam balances. But the torsion balance, invented by Coulomb to measure minute electrical forces, is still more delicate. It consists of a brass wire, hung by one end and stretched by a light weight, carrying at its lower end a horizontal needle. Any force applied to one end of this needle, tending to rotate it horizontally, will be measured by the angle through which it causes the needle to move; that is, by the torsion of the wire. See ELECTROMETER.

BALANCE OF POWER, called by the Germans *politisches Gleichgewicht* and *Gleichgewicht der Staaten*, and by the French, *équilibre politique*, is the system by which greater states are withheld from swallowing up smaller ones. Vattel (Law of Nations, b. iii. c. 8. s. 47) thus defines it: "By this balance is to be understood such a disposition of things, as that no one potentate or state shall be able absolutely to predominate and prescribe to the others." The modern Austrian diplomatist, Friedrich von Gentz, in his *Fragments aus der Geschichte des politischen Gleichgewichts von Europa*, c. 1, defines it: "What is usually termed a balance of power is that constitution subsisting among neighboring states more or less connected with one another, by virtue of which no one among them can injure the independence or essential rights of another without meeting with effectual resistance on some side, and consequently exposing itself to danger." The system of the balance of power is entirely the outgrowth of the modern political system of

Europe as it began to shape itself in the 15th century; not that it was entirely unknown to the ancients before the irresistible progress of Roman arms put any idea of balance out of the question. It has been shown by the British writer, David Hume, in his *Essays*, part ii. essay 7, and about the same time by the German, Ludwig Kahle, that the Greeks, both before and after the Macedonian era, often acted upon the idea. Mr. Hume says: "In all the politics of Greece, the anxiety with regard to the balance of power is apparent, and is expressly pointed out to us even by the ancient historians. Thucydides represents the league which was formed against Athens, and which produced the Peloponnesian war, as entirely owing to this principle; and after the decline of Athens, when the Thebans and Lacedæmonians disputed for sovereignty, we find that the Athenians, as well as many other republics, always threw themselves into the lighter scale, and endeavored to preserve the balance. They supported Thebes against Sparta, till the great victory gained by Epaminondas at Leuctra; after which they immediately went over to the conquered—from generosity as they pretended, but in reality from their jealousy of the conquerors. . . . Whoever will read Demosthenes' oration for the Megalopolitans, may see the utmost refinements on this principle that ever entered into the head of a Venetian or English speculatist." Polybius, writing when already the Roman power was throwing its long shadow over the landscape of the future, notices the policy of Hiero, king of Syracuse, who, though the ally of Rome, yet sent assistance to the Carthaginians, "esteeming it requisite both in order to retain his dominions in Sicily, and to preserve the Roman friendship, that Carthage should be safe; lest by its fall the remaining power should be able without contest or opposition to execute every purpose and undertaking; and here he acted with great wisdom and prudence, for that is never on any account to be overlooked, nor ought such a force to be thrown into one hand as to incite the neighboring states from defending their rights against it." But in the international relations between the successors of Alexander, Perdicas, Lysimachus, Antipater, Cassander, Eumenes, Seleucus, Ptolemy, Antigonus, and Demetrius, will be found the best ancient example of the application of the idea of the balance of power. Of all these kings, Ptolemy of Egypt adhered most steadily to the idea of not aiming at unlimited aggrandizement for himself, and of opposing that ambition in each of his rivals. The history of the empire of Alexander, from 323 to 301 B. C., the date of the battle of Ipsus, is nothing but a prolonged contest between the principle of the one man power, and that of the division or balance of power. The battle of Ipsus, which awarded the victory to the allied kings, and brought Antigonus to the ground, was as clearly a victory of the balance of power as the battle of

Waterloo, where Napoleon Bonaparte was ruined. But all these efforts of antiquity after the balance of power were not sustained for a sufficiently long period, from generation to generation, from century to century, were too transitory and casual to entitle them to be elevated into a system. They must be regarded as approaches and tentatives, interesting, but in the end fugitive and unsuccessful. Not during the undivided ascendancy of the Roman empire nor during the confusion and endless clashing of the barbarian states which succeeded the Roman empire of the West, can we look for any conception of the balance of power. During the latest centuries of the middle ages, the kings of France and the emperors of Germany were too much engaged in their domestic struggles with their great vassals, who owed them allegiance, but were always their bitterest enemies, to spare the concentrated attention and energy upon international affairs necessary to originate and sustain a system of balance in Christian Europe.—In Italy, then so far in advance of the rest of Europe in intellectual, social, and political development, the princes, podestas, and republics of that peninsula, from an early period of the 15th century, had built up the institution of an equilibrium for their mutual regulation. As says Guicciardini: "Their jealousy of each other made them watchful of every motion or measure which they conceived might in any way increase the power of their neighbors;" and he draws a glowing picture of the long peace and general security which ensued upon the establishment of this organization. But this was too local and on too small a scale to be deemed the parent of our modern system.—Not until Louis XI. of France had repressed the dukes of Burgundy and Brittany, not until Ferdinand of Castile and Aragon had united almost the whole of modern Spain under his sway, not until Maximilian in Germany, and Henry VII. in England and Ireland had consolidated the monarchical authority, was the ground ready for the application of this idea. This period, the last quarter of the 15th century, is rightly regarded as the birth-day of the modern system of equilibrium which has grown and thriven apace from that time to the present, and now bestrides the world like a colossus. The invasion of Italy by Charles VIII. of France, and his claim to the kingdom of Naples, in 1494, gave rise to the first great European combination of otherwise hostile powers for the repression of the ambition of one. Almost all the Italian states, Maximilian, the German emperor, and Ferdinand of Aragon, suspended their animosities, and drove the French out of Italy. The emperor Charles V. of Germany, Spain, Burgundy, the Netherlands, and a vast transatlantic empire, 1519-'56, caused the jealousy of Europe. Francis I., of France, actually went so far as to ally himself with the infidel sultan, Solyman the Magnificent, against Charles. The Turks at one end of Europe, the kings of France and Eng-

land at the other, and the opposition of the Protestant princes in the centre, prevented Charles from realizing his ambitious schemes. The misfortunes of Philip II. the son of Charles V., in the Dutch Netherlands and in the expeditions against England and the English power in Ireland, effectually dissipated the fears Europe entertained concerning the overgrown power of the Spanish branch of the house of Hapsburg. The idea of a European equilibrium had now become sufficiently definite for Henry IV. of France to propose to Elizabeth of England at the commencement of the 17th century, a scheme for a federative congress, whose purpose it should be to maintain the peace of Europe in the same manner as the 5 great powers do now. The idea was impracticable in those days, and was entirely abandoned even as a project, on the assassination of that liberal and high-minded prince. The next potentate whose power gave general alarm and caused a coalition against him in the general interest, was the emperor Ferdinand II. of Germany (reigned 1619-'37). Gustavus Adolphus, of Sweden, appealing to the Protestant princes of Germany, subsidized by Richelieu, the French minister, and supplied with men by England and the united provinces of the Netherlands, achieved the task of humbling the power of the house of Austria. After the death of Gustavus, Oxenstiern of Sweden, and Richelieu of France, together forced upon the German emperor the celebrated treaty of Westphalia (1648), which relieved Europe from the fear of the house of Austria, and put an end to the 80 years' war. The next general danger came from France. The invasion by Louis of the Dutch Netherlands (1672), brought about a coalition of Holland, the emperor of Germany, the elector of Brandenburg, and the king of Spain, against the French king. William, prince of Orange, was the hero of this war; but the peace of Nimeguen (1678) sealed the supremacy of Louis XIV. In 1686, a new anti-French league was formed, consisting of the Dutch republic, the German empire, Spain, Denmark, Sweden, and Savoy, to which, after the revolution of 1688, which placed William of Orange on the British throne, England acceded with enthusiasm. France, exhausted in her finances, though successful on land and sea, made the peace of Ryewyck (1697), by which Louis XIV. restored most of his conquests. The will of the king of Spain nominating the second son of the French dauphin as his successor (1700), thus putting the powerful monarchies of France and Spain into the same hands and utterly destroying the European equilibrium, created the grand alliance and the war of the Spanish succession. The emperor of Germany, the duke of Savoy, the king of England, and the states-general of the United Provinces, united in this grand alliance. The king of Portugal afterward joined the anti-French confederacy. Marlborough and Prince Eugene, of Savoy, were the great military leaders in behalf of the balance of power.

The peace of Utrecht (1713), by which the union of the French and Spanish crowns was prevented, and the territorial conquests of France almost wholly surrendered, reestablished the influence of the equilibrium doctrine, and secured Europe from danger on this side until the era of the French republic. During the first part of the 18th century, two new powers arise and introduce new elements into the quasi-federal government of Europe, the Prussian and Russian monarchies. The empress Elizabeth, of Russia, was the first Russian potentate who took part in wars in which she had only a remote general interest. In 1748 she sent 87,000 men under Repnin, to the aid of Maria Theresa, of Austria. These men were in the pay of Britain and Holland. These two parvenu states, Prussia and Russia, celebrated their entry into the rank of first-class powers by dealing the most terrible blow to the balance of power which it has ever suffered. The first partition of Poland (1771-'72) is admitted by every writer on this subject to be at war with the fundamental principles on which the equilibrium rests. The achievement of American independence (1788), though not generally reckoned by European writers as belonging to the history of the international balance, may well be included therein, inasmuch as it put an end to the overgrowth of British colonial power and British naval preponderance. The wars of the French republic and empire (1793-1815) made the balance of power during that bloody interval an obsolete idea. At the congress of Vienna (1814-'15), it was the leading wish of Lord Castlereagh, the British plenipotentiary, to restore the kingdom of Poland, as included in the European equilibrium, in which he was seconded by Metternich for Austria, and Talleyrand for the French legitimate sovereign, but opposed by the representatives of the Russian and Prussian monarchies. The return of Napoleon from Elba put an end to this difference, and in the renewed conferences after the battle of Waterloo, the western powers did not insist upon the point. From 1815 to 1853, the world was substantially preserved from any war of importance by the five great powers who preside over the destinies of Europe, namely, France, Great Britain, Russia, Austria, and Prussia.—In 1853, the invasion of the trans-Danubian provinces of the Turkish empire by a Russian army, was declared by a congress of the great powers at Vienna to be a breach of the political equilibrium. In this declaration France, Great Britain, Austria, and Prussia agreed. An Anglo-French alliance was made (1854) to repel the aggression, and the confederation of Turkey, Great Britain, and France, was reinforced by the king of Sardinia in the spring of the year 1855. After a war of 3 campaigns, the treaty of Paris was signed (March 30, 1856), by which Russia abandoned her claims, and the principle of the balance of power was anew vindicated. Nor must we omit to note the concession made by Britain at

the Paris congresses to the same principle in acknowledging the maritime rights of neutrals.—The United States have never taken any part in maintaining the balance of power in Europe; but in America they have made some rather informal and unofficial declarations on the subject, the chief of which is known as the Monroe doctrine. According to this doctrine, no European power is to be allowed to acquire any new possessions or found any new colonies in America.

BALANCE OF TRADE, the equilibrium between the imports and exports of a country or community. When, for instance, the United States exports more than it imports, the balance of trade is said to be in its favor, and *vice versa*.

BALANGUINI, or **BAWINGOKE**, an islet of the Malay archipelago, one of the Sooloo group. It is claimed by Spain as part of the province of Zamboanga, in the island of Mindano. It lies in lat. 5° 57' 30" N., long. 121° 39' E.; and between two other islets somewhat larger than itself, called Samoosa and Parool. It is about 3 miles long and 1 broad. This small spot gives name to the most daring and enterprising pirates of the archipelago. In 1848, it was attacked and captured by a Spanish force of 650 infantry and artillery, with a squadron of 3 war steamers, and sixteen smaller armed vessels, under the governor-general of the Philippines; and the resistance made will show the formidable character of these pirates. The Spaniards had 11 officers and 170 men killed and wounded. They stormed four redoubts, captured 124 cannon, mostly of small calibre, and burnt 150 war prahus; 450 of the pirates were killed, refusing to take quarter. Two hundred captives were rescued from slavery. The forts and houses of the island were levelled to the ground, and, in order to make it uninhabitable, the cocoa palms were cut down to the number of between 7,000 and 8,000. This was the most signal punishment ever inflicted on Malayan pirates by a European power; unless we except the slaughter of the Sakarran Dayaks by Rajah Brooke.

BALANZAC, **FRANÇOIS DE BREMOND**, also **BALANZAC DE VAUDORT**, one of the leaders of the Protestant party in France, of the middle of the 16th century, died 1593. He fought for the doctrine of Calvin at Dreux, and at St. Denis, at Jarnac and at Pamprou, at Jazeneuil and St. Maixent, at Chizé and at other places. Wherever a good fight was going on with the enemies of the Reformers, there Balanzac was to be found. The brilliant issue of the famous battle of Coutras (Oct. 20, 1587) was due to his prowess. The parliament of Bordeaux sentenced him to death, from which he escaped by an inadvertence in the death-warrant, which, instead of François, was made out in the name of his cousin Charles, who belonged to the Catholic party. Long after he had withdrawn from active service, Henry IV. invited him, in 1590, to take part in the campaign against the duke of Parma. The old soldier of religion, already with one foot in the grave,

buckled on his armor with the zest of a fiery youth, and fought with his wonted enthusiasm.

BALARD, or BALLARD, ANTOINE JEROME, a French chemist, born at Montpellier, Sept. 8, 1802, distinguished himself in 1826, by the discovery of bromine in sea water, also by the extraction of sulphate of soda, which increased the supply and lowered the price of potash, which, previously to M. Balard's investigations and discoveries, was principally obtained from vegetable substances. His records of these interesting discoveries were published in the *Annales de chimie et de physique*. M. Balard, whose profession originally was that of an apothecary, was for some time attached as professor to the school of pharmacy and the college of Montpellier. His great reputation obtained for him a call to the chair of chemistry in the faculty of science of Paris, which he still holds, while at the same time he is titular professor at the college of France, and for many years he was connected with the normal school of Paris. In 1844, he was chosen a member of the academy of sciences.

BALARUC, a little French village of about 100 inhabitants in the department of Hérault. Within a short distance of it are three warm baths, which have many of the virtues without any of the disagreeable taste of sea water, with temperature of about 129° F. in summer, and 15° in winter.

BALASORE, a maritime district of British India, presidency of Bengal, bounded on the E. by the bay of Bengal, and adjoining the districts of Midnapoor and Outtack; area 1,890 sq. m.; pop. 500,000. Rice and salt are its chief products.—Its capital is Balasore, or Baleswara, port town on the Boorabullung, 8 miles from the mouth, and 128 miles from Calcutta; pop. 1,500.

BALATON, or PLATTEN SEE, a lake in the north-west of Hungary, which extends from lat. 46° 45' to 47° 5' N., and from long. 17° 15' to 18° 10' E.; area about 110 sq. m., or, including the marshy shores, about 138 sq. m. It receives the waters of more than 80 small streams. It discharges through the Sio, which empties into the Sarviz, an affluent of the Danube. The Balaton is constantly in a state of motion, sufficient to cause waves. Its waters are perfectly transparent, and abound with fine fish. A fish found here called fogas, frequently is 15 lbs. in weight, and has delicious flesh of snowy whiteness. Another kind of fish which resembles the herring swarm in the lake during the winter in such shoals, that the fishermen sometimes haul 50 cart loads in a single day from under the ice.

BALBI, ADRIANO, a famous geographer, born at Venice, April 25, 1782, died at Padua, March 1, 1848. He was first a professor of geography and natural philosophy in his native city; then, having married an actress, he went in 1820 to Portugal, where he became acquainted with the leading scholars and statesmen. He had free access to the government archives, and

from the documents he collected, composed an interesting work entitled *Essai statistique sur le royaume de Portugal et d'Algarve, comparé aux autres états de l'Europe*, which he published at Paris in 1822. He followed his scientific pursuits in that metropolis, and 4 years later produced the first part of his *Atlas ethnographique du globe, ou Classification des peuples anciens et modernes d'après leurs langues*, a work of superior arrangement, in which he spread before the French public the result of the researches and disquisitions of the German philologists. He published afterward, in concert with several scientific men, statistical tables of Russia, France, the Netherlands, &c. He now gave all his attention to his *Abrégé de Géographie rédigé sur un plan nouveau*, a summary of geographical science, which appeared in 1832, and has been translated into nearly all the European languages. Then he retired to Padua, where he published, in 1835, his *Essai sur les bibliothèques de Vienne*. Beside the works above cited, we must mention *La monarchie française comparée aux principaux états de l'Europe*, Paris, 1828; *Balances politiques du globe*, 1828; *L'empire russe comparé aux principaux états du monde*, 1829; "The World compared with the British Empire," 1830; *Statistique comparée de l'instruction et du nombre des crimes*, 1828. Balbi was also a contributor to many important publications, *L'Encyclopédie des gens du monde* and *Le Dictionnaire de la conversation*. His works show a great amount of knowledge, thorough research, and skilful arrangement of material; but being utterly deficient in style, they are heavy and of difficult reading; however, they may always be advantageously and safely consulted.—GIOVANNI, called DE JANUA or JANUENSIS, from his birthplace, Genoa, a Dominican friar, lived toward the end of the 13th century. He composed a kind of cyclopædia, which he called the "Catholicon." This book owes its celebrity principally to the fact that it has become one of the earliest monuments of the art of printing. The original edition is to be found under the title, *Summa Grammaticalis valde Notabilis quæ Catholicon Nominatur*, Moguntiae, per Johannem Faustum, 1460, in fol. It was reprinted at Augsburg, 1469 and 1472, by Schoeffer; at Nuremberg, 1483, by Koburger; at Venice, 1487, revised and improved, by Pietro Gilles.

BALBI, COUNTESS OF, a French woman, born in 1753, died at Paris about 1836, is only known by her familiar relations before the revolution with Louis, count of Provence, afterward King Louis XVIII. She was an unprincipled and foolish woman, and caused her husband to be legally interdicted, while she lived on the most intimate terms with the prince, whom she fascinated by her wit and sprightliness. Although he was not over-generous, she drew enormously on his purse, and more than once involved him in serious difficulties. When he left Paris she followed him to Mons, then to Coblenz; but there she soon perceived that she was about to

be supplanted by a new friend of the count of Provence, M. d'Avary, and wisely decided to retire. She then went to Holland, where she fell in love with a French emigrant, and behaved so scandalously that she could no longer appear at court. She spent a few years in England, returned to France after the 18th Brumaire, and resided in the vicinity of Paris; but, being suspected of taking part in royalist intrigues, was ordered to Montauban, where she established a gambling house. In 1814 she attempted in vain to see her old lover, now become king. She succeeded better in 1815, had a secret interview with him, and from that moment until her death led a retired life in the capital.

BALBINUS, DECIMUS CAELIUS, one of the 80 emperors who reigned in the single century between the death of Commodus and the accession of Diocletian, of whom only 2 died a natural death. He was a Roman senator of good family, wealth, literary tastes, and humane culture; in fact, an excellent specimen of the Roman gentleman. After being twice consul he was elected emperor by the senate in opposition to the soldiers' nominee, Maximinus. The senate outlawed Maximinus, and joined Maximus to Balbinus so as to have a double emperor. Maximus was an experienced officer, who had risen from the ranks, and was to conduct the military part of the government while Balbinus busied himself with the civil. Maximinus being killed by his own soldiers, Maximus enjoyed a triumph for putting an end to the civil war 241 B. C. Unhappy jealousies now broke out between Balbinus and Maximus which proved the ruin of both. Neither of them was liked by the army, though popular with the multitude of the city and trusted by the senate. The only reliance of Maximus against the Prætorian guards, who detested any emperor not elected by themselves, was on a body of barbarian Germans. One day when the citizens had all gone out to witness the Capitoline games, the Prætorians sallied forth to attack the hated emperors in their palace. Maximus sent an order for his trusty Germans, but Balbinus refused to counter-sign it from some inexplicable distrust of his colleague. The Prætorians burst unresisted into the palace, seized on the persons of the 2 emperors, dragged them to their camp with the most indecent ignominy, and, hearing that the Germans were coming to the rescue, they put them to death. The assassins were never prosecuted.

BALBO, CESARE, count, an Italian statesman and author, born in Turin, Nov. 21, 1789, where he died, June 3, 1853, and where, on July 8, 1856, a monument, by the artist Vela, was erected to his memory. Through the favor of Napoleon, he was appointed auditor to the French privy council in 1807, and afterward became secretary to the French commissioners charged with the organization of Tuscany and the papal states. In 1812 he was promoted to the office of commissioner of Illyria,

and after the downfall of Napoleon became secretary of the Sardinian ambassador in London, until the outbreak of the Sardinian revolution in 1821, when he returned to his native town in order to devote himself to literary pursuits. He wrote a history of Italy up to the time of Charlemagne, and translated Heinrich Leo's "Exposition of the Municipal Institutions of Lombardy," from German into Italian, under the name of *Comuni Italiani*. His reputation was not firmly established, however, until the latter year, when his *Speranze d'Italia* made its appearance. His appeal in favor of a national independence found a powerful echo in the popular heart, and paved the way for the revolution in which he was destined to play a prominent part as a champion of the moderate party. His next work, printed at Bastia, in 1849, *Della storia d'Italia, dall'origine fino al 1814* (History of Italy, from the Beginning to 1814), was not only inspired by the same patriotic spirit, but also distinguished by historical merit. But although he had in 1848 and 1849 strenuously opposed the democratic party, and unwaveringly adhered to a more conservative policy, he threw the entire weight of his political influence into the scale of patriotism, as soon as the war against Austria began. He supported the different cabinets which governed Sardinia after the promulgation of the constitution of March 4, 1848, and was, though for a very short time, personally connected with the government. He became a regular contributor to the *Rivista*, a leading paper of Turin, and in it gave a constant support to D'Azeglio's administration.

BALBOA, MIGUEL CAVELLO, Spanish missionary in America in the 16th century. At Bogota he acquired some documents relative to American antiquities, and addressed himself to their study. The collection and narrative which he made in 1586 was first published at Paris in 1840, under the title of *Histoire du Pérou*. He contradicts Garcilasso de la Véga in various particulars.

BALBOA, or BALBAO, VASCO NÚÑEZ DE, Spanish discoverer and conqueror in America, born at Xeres de los Caballeros, in 1475, died at Castilla de Oro, in 1517. He was of noble but poor extraction, and having been a member of the expedition of Bastidas, in 1501, he remained in America until the expedition of Ojeda and Nicuesa in 1510. Bachiller Enciso was one of the lieutenants of this expedition, and at Espaniola, Balboa joined Enciso's party and sailed for Ojeda's settlement in the gulf of Darien. Enciso's vessel was wrecked on the coast, and when they got to land by swimming, the adventurers found the settlement in ashes. The Indians in the neighborhood were warlike, and by Balboa's advice the party quitted the spot and after much trouble from a less savage tribe succeeded in founding the town of Santa Maria de la Antigua de Darien. Here the Spaniards began to enter into friendly relations with the natives, and to barter trinkets and goods for

gold, when to the great discontent of his men, Enciso forbade the trade. On this they deposed him. The whole party fell into disunion. Some adhered to Enciso, others declared for Nicuesa, one of the original leaders to whom the grant of territory had been made by the crown, while others again determined to follow the fortunes of Balboa. A vessel with stores belonging to Nicuesa having arrived determined the band to send in search of that leader, who was found at Portobello. He hastened thence to the new settlement, where, against Balboa's advice, he landed and was at once seized by some of the adventurers, who put him on board a small vessel with 17 of his adherents. Nicuesa was supposed to have been lost at sea. The friends of Enciso and Balboa now had leisure to renew their quarrel. The Balboa party proved successful, and Enciso was condemned to imprisonment or having illegally taken Ojeda's command. Balboa banished him from Darien, and sent a representative (Zamudio) to Spain to explain the position of the Spanish settlements, and justify his own conduct. He now undertook an expedition into the interior, and gained information of an important country to the south; upon which Balboa sent word to Columbus, at Hispaniola, and asked reinforcements that he might be able to act on the intelligence. His prudent and conciliatory policy won upon the affections of the Indians, and he was able to explore the isthmus of Darien, and on Sept. 29 gained the summit of a mountain from which he saw the Pacific. He threw himself on his knees, thanked God for permitting him to be the discoverer of this great ocean, and erected a cross on the spot. Descending to the sea-shore in full armor, he took possession of the whole east in the name of the Spanish crown. After short rest to recruit, the party returned to Darien, from which he sent the news of his discovery to Spain. The Spanish court was prepared to receive intelligence from Balboa. The malevolent and interested statements of Enciso had created a strong feeling against him, and Pedrarias Davila was sent out to Darien with instructions to supersede Balboa and to try him as a rebel. On Davila's arrival these reactions were carried out, and Balboa was sentenced to a heavy fine for superseding Enciso. The new arrivals in their conduct to the natives, and their impatience to grasp the golden fruits of their enterprise, soon obliterated the grateful sentiments of the Indians toward the Spaniards, produced by Balboa's humane and liberal policy. An active hostility was thus kindled up which reduced the settlement to great straits. The Spanish court, at length made aware of the merits of Balboa, made him deputy under Pedrarias Davila; but the latter for a time refused to give him the appointment, and Balboa sent a trusty friend to Ouba to raise a party of volunteers with whom he might form another settlement. This reached the governor's ears, who was so irritated that he determined to punish Balboa, but the counsel of

Bishop Quevedo prevented the breach. He, however, continued too jealous of Balboa to give him employment. In 1517, however, the governor determined on erecting a new settlement on the Pacific coast, and sent Balboa to build vessels. The vessels were built under great difficulty, and new islands were discovered. Rumors reached him of the superseding of the governor by Lope de Sosa, and Balboa sent Garalito, his former friend, to Darien, to ascertain the news and to procure further supplies. Whether from native envy or from false statements of Balboa's intentions, Pedrarias Davila charged Balboa with a design of sailing in quest of new discoveries on his own account and recalled him. On his return Balboa was arrested, tried for treason, and condemned to be executed. In his last hours he protested that he was unjustly condemned, that he had ever been a loyal subject, and had no thought but of increasing the power and majesty of the crown of Spain. He was beheaded on a trunk of a tree which served for a block, and his corpse was exposed in the place of execution more than 12 hours. Four of his faithful friends were executed with him.

BALBUENA, BERNARDO DE, a Spanish poet and prelate, born in 1568, at Val de Peñas, in the ancient province of Mancha, died 1627, in the West Indian island, Porto Rico. In early life he accompanied his family to Mexico, where he was educated at a theological seminary. He distinguished himself, and when only 17 years old he carried away a prize from 800 competitors. In 1608 he visited his native country, but soon returned to the new world. Until 1620 he officiated at Jamaica, and thence to the time of his death as bishop of Porto Rico. He is the author of *El Siglo de Oro*, the "Age of Gold," a pastoral romance, the scene of which is laid in the new world. The honor of republication was conferred upon this work by the Spanish academy, in 1821. In 1609 he wrote a poetical description of Mexico, under the title of *La grandesa Mejicana*, the "Grandeur of Mexico," which was also republished by the academy in 1821. He further composed various lyrical poems which are annexed to the academical editions, and several other works which have not come down to us. His most famous work is an epic *El Bernardo* (in 24 books), which first appeared at Madrid, in 1624.

BALBUS. I. L. CORNELIUS, sometimes sur-named Major, to distinguish him from his nephew, was born at Gades, an ancient city of Iberia, in the 1st century. In the Sertorian war the Gadseans supported the cause of the senate, and the youthful Balbus served his first campaign under Q. Metellus Pius and Pompey. For his conduct in this war the privileges of a Roman citizen were conferred on himself, his brother, and his nephews. In 72 B. C. Balbus removed to Rome, where he is said to have insinuated himself into the Crustumian tribe, by prosecuting one of its members for corruption, and thus acquiring that fellowship

with it which the criminal had lost. Balbus had made the acquaintance of Pompey in Spain, who now gave him many and valuable proofs of his favor. Balbus, however, was not the man to limit himself to one patron when another equally capable of promoting his interests could be found. He soon began to worship the rising sun of Cæsar; and was numbered ere long among his most intimate friends. He accompanied Cæsar into Spain in 61 B. C., as chief of the mechanical brigade which was attached to the Iberian army. During the first triumvirate he affected the part of a neutral, but it was nevertheless evident that he attached himself more closely to the fortunes of Cæsar than to those of Pompey. In 58 B. C. he attended Cæsar into Gaul, and was again appointed *præfectus fabrum* to his legions. In the period of the Gallic wars he spent much of his time at Rome, where he had the care and control of Cæsar's private property, and acted as agent for the sale of the plunder taken from the enemy. In 55 B. C. his own foes and the foes of the triumvirs sought to raise an accusation against him of having assumed illegally the privileges of a Roman citizen. When the trial came on, Pompey and Crassus, the colleagues of Cæsar, and Cicero, the common friend of at least 2 of the triumvirs, appeared to defend Balbus, and fully established his title to those privileges. The oration of Cicero in his defence is still extant. Balbus did not bear arms against the Pompeians in the civil wars, but continued at Rome, and even attended to the affairs of some old friends who had followed the fortunes of his early patron. All his exertions were directed, however, to promote the success of Cæsar. He opened a correspondence with Cicero, seeking to induce him to return to Rome and declare in favor of Cæsar. This correspondence proved a failure in the first instance, but after the battle of Pharsalia Cicero reopened it and even condescended to entreat Balbus to mediate between him and the conqueror. This office was readily undertaken by the favorite, and the result was all that Cicero could have desired. On the assassination of Cæsar, Balbus retired to his country-seat, where he remained until the arrival of Octavianus in Italy. He then hastened to Naples to meet the heir of his departed patron, whom he accompanied to Rome, and who conferred on him in time higher offices and greater honor than he had ever received at the hands of Cæsar. He attained, under the *regime* of Octavianus, to the dignities of ædile, prætor, and consul. The years of his ædileship and prætorship are uncertain, but he was consul in 40 B. C., and is said to have been the first adopted citizen who filled that office. In his will he bequeathed 20 denarii to every Roman citizen. The time of his death is not known. Balbus was the author of a diary of the most eventful occurrences in his own and Cæsar's life. We are indebted to him for the continuation of the commentaries on the Gallic war. Four of the letters

which he addressed to Cicero have come down to us. II. L. CORNELIUS, commonly called Balbus Minor, in contradistinction to his uncle, the preceding Balbus, was also a Gadæan. After the outbreak of the civil war he was twice sent to the Pompeian camp to induce the consul L. Cornelius Lentulus, an intimate friend of his family, to abandon his party, and come back to Rome. His eloquence and his arguments on both occasions were alike thrown away on Lentulus, who remained firm in his allegiance to Pompey. Balbus attended Cæsar throughout all the campaigns of this period, and after their termination was rewarded for his services with the office of pontiff. While quæstor to Asinius Pollio in further Spain in 44 and 43 B. C., he greatly enlarged and improved his native city. But his general conduct during the quæstorship was shameful. He plundered and oppressed the provincials, who had not the good fortune to be Gadæans, defrauded his fellow-soldiers, and ultimately deserted and fled to Africa with his ill-gotten wealth. For 20 years after his flight nothing is known of Balbus. He then suddenly reappeared as proconsul of Africa. While holding this office he gained a victory over the Garamantes, which subsequently procured him the honor of a triumph—the first ever enjoyed by one not born a citizen of Rome. Balbus was now rich, and to commend himself to Augustus he built a theatre at Rome, the roof of which was supported by pillars of onyx. It was dedicated in 18 B. C., and afforded so much pleasure to the emperor, that he instructed Tiberius, then consul, to mark his appreciation of it by paying Balbus the compliment of asking his opinion first of all the senators, during his term of office. III. Q. LUCILIUS, a celebrated stoic philosopher, whom Cicero parallels with the most illustrious of the contemporaneous philosophers of Greece. He was the brother of L. Lucilius, the jurist, and the pupil of Panætius. In Cicero's dialogue *De Natura Deorum*, Q. Lucilius is the expositor of stoical opinions on the mysterious subject. IV. L. OCTAVIUS, a distinguished Roman lawyer, contemporary with Cicero. As a judge, whether in public or in private cases, he bore the very highest reputation. The manner of his death was remarkable. I. Octavius was among the number of those whom the triumvirs Octavianus, Antony, and Lepidus had doomed to death. On learning that his name was in the fatal catalogue, he fled from his house and had already reached a place of safety, when he was informed that a party of soldiers were murdering his only son. He no longer thought of himself, but rushed back and arrived at his house just in time to assure himself of the falsity of the report, and to encounter the ruffians, who sacrificed him in the presence of that son whom he had returned to save. V. T. AMPHIUS, a Roman tribune, who, in 63 B. C., sought to obtain for Pompey the honor of wearing a laurel crown and all the insignia of a triumph at the Circensian and other

games, in consideration of his Asiatic victories. Balbus next appeared as a candidate for the ædileship, which, however, he failed to obtain, though sustained by the influence of Pompey. But he must have been more successful afterward, for in 59 B. C. he was prætor, and, in the following year, governor of Cilicia. On the outbreak of the civil war in 49 B. C., he joined the Pompeians, and distinguished himself by activity in raising soldiers for the conflict. After the overthrow of his party at Pharsalia, he retired into Asia, and there signalized himself by attempting to plunder the temple of Diana at Ephesus. The sudden arrival of Cæsar, however, frustrated this attempt, and T. Ampius had to devise other expedients for eking out funds. Balbus was one of those who were banished by the dictator because of their devotion to the Pompeian party. But the mediation of Cicero obtained the repeal of the sentence, and he returned to Rome in 46 B. C. He wrote a work on the events of his own times, an extract of which is given in Suetonius.

BALCOAS, or **BALSAS** (Portuguese, *balsa*, a float), a river of Brazil, which begins in the Lima Corvados, and after a course of 200 miles (for a third of which it is navigable for canoes), discharges into the Parnaíba or Paranaíba, in lat. 7° 15' S., long. 46° 10' W.

BALCOMB, a parish of England, county of Sussex. It has a tunnel of 1,184½ yards in length, through which passes the London and Brighton railway.

BALCONY. Balconies are formed nearly on a level with the floors of rooms, and supported on cantilevers or brackets, and sometimes on columns of wood or stone. The etymology of the word has been frequently traced to the Greek *βαλλειν*, to throw. This rests upon the presumption that balconies were built originally for purposes of defence, the enemy being attacked with missiles thrown upon him from the balcony. The Latin word is *balcon* or *palus*, the Italian *balconia*, also *balco* or *palco*, the Turkish *bala-khaneh*, the German *Balcon*. The use of balconies is comparatively modern, although there is no doubt about their existence in times of antiquity. Winckelmann, the great German writer upon art, refers to the fact that in Greece every private dwelling-house had contrivances which, although then designated under different terms, would be called balconies in our day. In Spain, Italy, and South America, they are used for sitting, walking, hatting, and flirting, in warm summer evenings; but they are not much found in northern countries, where the nature of the climate does not all for such romantic contrivances. Upon Boccaccio and Bandello, the great Italian novelists of the 16th century, the poetical utility of balconies was not lost, and entertaining balcony scenes abound in their stories. Shakespeare took his plot of Romeo and Juliet from one of Bandello's novels, and the balcony scene exhibits, with that power of genius of which the great

English dramatist alone was capable, the beauty of a balcony, when two young lovers like Juliet and Romeo make it the witness of their passion. In the modern theatres the name of balcony seats is applied to places from which one can best see and best be seen, consequently the most sought for and most expensive seats of the house.

BALDACHIN (Italian *baldachino*), an architectural construction of wood, bronze, or marble, raised in the form of a crown upon 2 or more columns, and designed to serve as a covering to an altar. That of the church of St. Peter at Rome is the most magnificent of the works of this kind.—The name baldachin is also given to a rich tapestry used in the ceremonies of the Roman Catholic church, and hung above the pontifical chair. It is commonly of the richest materials, and adorned with gold, and its use is traced back to the earliest ages of Christianity.

BALDASSERONI, GIOVANNI, prime minister of Tuscany, born in 1790, at Leghorn, ingratiated himself with his sovereign by his administrative talent. After holding various subordinate offices at Pisa and Florence, he was intrusted with the management of the finances, and officially appointed minister in 1847. He was chosen a member of the Tuscan senate, but had soon to withdraw before the revolution of 1848, which ousted his party from power. As soon, however, as the political excitement subsided, he was appointed premier of the new anti-revolutionary administration, and, as such, took a part in the abrogation of the constitution and of the liberty of the press. He continues to hold this office, while at the same time he officiates as minister of finance. His administration in the latter department was signalized by the negotiation of a loan of 80,000,000 lire, and by an increase of taxation. He enjoys the reputation of a shrewd financier, and a subtle politician, but is considered to be deficient in the higher qualities of statesmanship.

BALDAYA, AFFONSO GONÇALVES, a Portuguese traveller of the first half of the 15th century, was employed by the infant of Portugal, Dom Henrique, on the explorations of Cape Bojador, and generally of the coast of Africa. He distinguished himself by his intrepidity, and succeeded in defeating, with the assistance of his companions, Heitor Homem and Diogo Lopez d'Almeida, the Moors, who impeded their progress along a river, which Baldaya called *Rio-do-Ouro*.

BALDE, JAKOB, a German Latin poet, born at Ensisheim, in Alsace, in 1603, died at Neuburg, on the Danube, in 1668, was court-chaplain of the prince electoral of Bavaria, and distinguished himself by the excellence of his Latin poetry. Herder called attention to the beauty and genius of his lyrical productions, many of which he translated.

BALDI, BERNARDINO, an Italian linguist and mathematician, said to have written nearly 100

works, on an immense variety of subjects, born at Urbino, June 6, 1558, died Oct. 12, 1617. After studying at Padua, his learning obtained for him the abbey of Guastalla. Here he became involved in disputes with the temporal authorities, and finally resigned his post. He was sent, in 1612, to Venice by the duke of Urbino, as his envoy, to congratulate the new doge, Andrea Memmo. The inscription upon his tomb states that he was master of 12 languages.

BALDINGER, ERNST GOTTFRIED, a German physician, born near Erfurt, May 18, 1738, and died at Marburg, Jan. 21, 1804. He was made superintendent of the Prussian military hospitals near Torgau; and published, in 1774, a treatise on the diseases that prevail in armies. He exerted a powerful influence upon the prosperity of the university of Marburg, and counted Sömmering and Blumenbach among his pupils.

BALDNESS, or **CALVITY**, want of hair on the top and back of the head; loss of hair, from disease or natural decay in the secreting follicles or piliferous glandulæ of the scalp, which include the roots of the hair, and are the source of its growth. These roots or bulbs are seated in the cellular connective tissue under the skin. Some of them give rise to several hairs, but as a general rule, each hair has a distinct bulb or root. The hairs of the head, and other parts of the body, grow only from below by a regular propulsion from the root, where new matter is continually added. Within the bulb the hair separates into several fibrillæ or small fibres; the hair varies in softness, fineness, color, quantity, and general character, according to the differences of age, temperament, and climate. Some constitutions or temperaments lose the hair of the head, and become bald, more commonly than others; and some occupations or professions seem to induce baldness more than others, in persons of the same race and temperament. The northern races are more liable to baldness than the southern; and fair complexions more than dark-haired races, inhabiting the same localities. A hot, dry skin is the chief cause of baldness, by exciting the roots or follicles too much, and thus exhausting prematurely their powers of secretion. This may sometimes be caused by fevers, and in that case the hair falls rapidly for want of functional activity in the bulbs; but a little time and moderate stimulation restore the secreting powers of the follicles, and the hair is reproduced. In persons who are liable to skin diseases, or in whom the skin is usually and continually hot and dry, especially in the scalp, the hair bulbs are at all times, more or less, over-stimulated, and become exhausted at an early age; first on the crown of the head, and gradually all around. A dry and feverish state of the skin may also be promoted by sedentary studious habits and vocations, or by excessive smoking, drinking, venery, and dissipation. When the functional powers of the bulbs are utterly destroyed, there

is no remedy for baldness; but where they are only partially exhausted, they may be restored by gentle local stimulants, and due attention to the general health and habits of the body. Cleanliness is the first necessity of healthy action in the skin. Proper warmth and clothing are also indispensable. Moderate exercise in the open air is not less essential; for heated rooms, sedentary habits, and excessive mental labor, keep the skin in a perpetual state of feverish heat or cold, which finally exhausts the secreting powers of the piliferous bulbs, beside doing serious injury to the whole system. When the general health of the body, and especially the skin, has been attended to, the head may be moistened with rosemary water and carefully brushed, as a daily stimulant to the root-bulbs of the hair in the scalp; or rum mixed with the oil of sweet almonds, in equal portions, may be rubbed on the scalp with the palm of the hand, once or twice a week, as a gentle stimulant to the skin and the secreting glandula. Over-stimulation must, however, be avoided, as it would produce a contrary effect to that which is desired. These means must therefore be used with moderation, not long at once, nor every day with equal stimulation. Simple brushing with water or a little pomatum is sufficient more than half the time. Some recommend a mixture of lard-oil and spirit of hartshorn, as a good stimulant for the bulbs of the hair; five parts of lard-oil to one of hartshorn; but it is rather strong, and should be used sparingly. Lavender water and rosemary water, with careful brushing, are excellent stimulants; and now and then a little rum and oil may be used for extra stimulation.

BALDO MONTE, a mountain 7,100 feet high, in Lombardy, on the east side of Lake Garda. It is composed mainly of horizontal strata of marble and calcareous tufa, and contains the green sand called the sand of Verona.

BALDOVINETTI, ALESSIO, a Florentine painter, born in 1424, died in 1499, the teacher of Ghirlandaio, who, in his turn, became the master of Michel Angelo.

BALDRIO (Fr. *baudrier*), a military band of leather, much used by warriors in antique as well as feudal times. It is pendant from the shoulder, and sustains a sword. In the columns of Trajan and Antonine, the common soldiers are represented as wearing the common girdle or waist-belt, while the officers are distinguished by the *baldrilus*. In France and Germany, under the Merovingian and Carolingian dynasties, baldrics were a sign of military rank.

BALDUNG, HANS, surnamed Grün, a painter and engraver, born at Gmünd, in Swabia, toward the end of the 15th century, died at Strasburg, in 1552. His masterpiece is the piece behind the altar, in the cathedral of Freiburg in Breisgau, which he executed in 1516. He excelled also in both wood and copper engravings.

BALDUR, or **BALDER**, that is, the valiant, one of the principal deities of Scandinavian mythology.

logy. He was the son of Odin, by Frigga, and the husband of Nanna. He was wise, mild, eloquent, and beautiful. His dwelling was Breidablik, the most delightful and sunny spot in the Scandinavian Olympus. Baldur had a terrible presentiment that his death was nigh. His anxious mother, Frigga, called all creation, animate and inanimate, together, and made every god, spirit, mountain, river, and element, swear that they would do him no harm. She overlooked one little parasitical devil called Mistel or Mistilteinn, the mistletoe, which appeared to have too little individuality about it to be summoned. Loki, the god of malice, got the unconscious Hödur, an extremely strong but blind god, to throw Mistilteinn at Baldur, which perforated the brilliant god, and let out his divine soul. Hermodur, the brother of Baldur, rode to hell on his steed, Sleipnir, to treat for his extradition, like Orpheus for Eurydice. Hela granted the request on the condition that every thing would weep for Baldur. But Loki, in the form of Thock, an old giantess, would not weep. So the gods had nothing else to do than to celebrate a tremendous wake over the body of Baldur, which they brought in a large ship over the sea. But the ship was so large that, not having a windlass, the assembled divinities could not drag it ashore. So they sent to Jotunheim, the home of the wild giants, for material aid. The giant world sent the hag Hirrokin to do the job. She came riding on a wolf, with serpents for reins. She shoved the ship so doughtily, that the whole shore trembled. The ship was brought safely to land by Hirrokin. The gods got Baldur's body, and the wake was as uproarious as could have been wished. Baldur's faithful wife, Nanna, sacrificed herself on her husband's funeral pyre. When Hermodur went down to visit the pair in Hela's dominions, Baldur gave to Hermodur the ring Draupner for Odin, and Nanna, trinkets for Frigga, and for Fulla, her gold wedding ring. The Saxons in England call him Baltai. The Wends Slavonized him into Balduri, and venerated him as the god of counsel. In Iceland, a man of talent is still said to be a Mann-Baldr. Baldur's son was the Ase or celestial god, Forseti.

BALDWIN. I. A central county of Georgia, bounded on the north by Little river, intersected by the Oconee, and comprising an area of 257 square miles. The surface in the southern part is tolerably level, in the north, more hilly. The character of the soil is equally varied, the river bottoms being highly fertile, while much of the land in other places is nearly worn out. The staples are grain, potatoes, cotton, peaches, and grapes. The productions in 1850 were 255,910 bushels of Indian corn, 20,962 of oats, 47,127 of sweet potatoes, and 4,448 bales of cotton. There were 6 churches, 5 newspaper offices, and 218 pupils attending schools. Named in honor of Abraham Baldwin, United States senator from Georgia. Capital, Milledgeville.

Pop. in 1855, 7,520, of whom 4,252 were slaves. Value of real estate in 1856, \$938,652. II. A southern county of Alabama, situated at the mouth of Mobile river, bordering on Florida and the gulf of Mexico, and comprising an area of about 1,900 square miles. It is bounded by Mobile river on the west, by the Alabama on the north-west, and by the Perdido on the east. Its surface is level or moderately uneven. The soil is sandy and unproductive, but supports a valuable growth of pine timber. Cotton, corn, and rice, are the chief staples. In 1850, the productions amounted to 628 bales of cotton, 74,801 bushels of Indian corn, 28,071 of sweet potatoes, and 52,075 pounds of rice. There were 5 churches, and 88 pupils attending public schools. Capital, Blakely. Pop. in 1850, 4,414, of whom 2,218 were slaves.

BALDWIN I., king of Jerusalem, born in Flanders, in 1058, died in 1118. With his brother Godfrey of Bouillon, he put himself at the head of the first crusade in 1095, and after violent disputes with Tancred, obtained possession of the principality of Edessa. He is alluded to by Tasso, as "the ambitious Baldwin of Edessa, who aspires only after human grandeur." In 1100, he succeeded Godfrey upon the throne of Jerusalem, and during his reign conquered Casarea, Ashdod, Acre, and Tripoli, but failed to defend Ascalon against the Mohammedans. II., surnamed *Dr Bourc*, cousin and successor of the preceding, died Aug. 21, 1131. He passed his life in military adventures, and feats of valor, and his arms enlarged the boundaries of the kingdom of Jerusalem. In 1124, with the help of a Venetian fleet he conquered Tyre, and he was one of the knights who united in founding the order of the Templars. He was held a prisoner by the Turks for several years. III., king of Jerusalem, grandson of the preceding, born in 1130, died Feb. 23, 1163. He was accounted a model of knighthood, as it existed in the period of the crusades, founded on fantastic conceptions of honor, right, reverence, and love. He defeated the sultan of Aleppo, at Jerusalem, in 1152, and obtained so great renown, that even the Saracens sought to serve under his banner. He increased his power by a marriage with Theodora, the daughter of the Greek emperor, Manuel, and besieged and conquered Ascalon in 1153. IV., king of Jerusalem, nephew of the preceding, born in 1160, died March 16, 1186. Though of a sickly frame, he had the valor of his race, and he signalized the beginning of his reign by a defeat of Saladin. He subsequently associated Guy of Lusignan with himself in the government, a measure which was very unpopular, and caused dissensions among the barons of the empire. Saladin availed himself of the internal anarchy of the kingdom in the latter part of his reign to push his own conquests in every direction, and one of the last acts of Baldwin was to send a messenger to the West to solicit the aid of European Christian princes.

BALDWIN, archbishop of Canterbury. He

was of humble extraction, and entered the church and became archdeacon of Exeter. After a time he abandoned the regular clergy, and became abbot of the Cistercian abbey of Ford. He was made archbishop of Canterbury, 1184, by Henry II. He died in the Holy Land at the siege of Acre in 1191.

BALDWIN, a name common to 9 counts of Flanders. This country, forming a part of old Belgium, was created a county for the first of them, who, in 864, married Judith, the daughter of Charles the Bald, king of France. This Baldwin, I., was surnamed Iron-Arm, and died in 879.—His son, Baldwin II., the Bald, waged war against the kings of France, Eudes and Charles the Simple, and died in 918.—Baldwin III., grandson of the preceding, died by the smallpox, in 962.—Baldwin IV., the Bearded, increased his family domain by several conquests, especially that of Valenciennes, received from the emperor Henry II., the island of Walcheren, established commercial fairs in divers cities of Flanders, and died in 1036.—His son, Baldwin V., of Lille, or the *Débonnaire*, who had, in 1034, married Alix, daughter of king Robert of France, conquered Haynault, was regent of France during the minority of his nephew, Philip I., helped William of Normandy, his son-in-law, in the conquest of England, and died in 1067.—His son, Baldwin VI., of Mons, or the Good, survived him but 3 years, and left the county of Flanders to his eldest son, Arnoul, while the youngest Baldwin received that of Haynault.—Baldwin VII., *Hapkin*, freed his country from the robbers by whom it was infested, was a faithful ally to King Louis the Fat, of France, against Henry I., of England, and died in 1119, of a wound received at the battle of Argues.—Baldwin VIII., after being the enemy of Philip Augustus of France, was reconciled to that king, swore allegiance to him in 1192, in the city of Arras, and died 8 years later.—His son, Baldwin IX., or as emperor of Constantinople, Baldwin I., 9th count of Flanders, born in Valenciennes in 1171, died in Constantinople in 1206, or, according to a chronicle of the 14th century, April 14, 1205. He was for a time at war with Philip Augustus of France, but having made peace with him, he embarked in the 4th crusade with his brother Thierry in 1200, and repaired to Venice with a body of men-at-arms. There being a deficiency of funds to pay for the Venetian transports, Baldwin set the example of contributing his jewels and paraphernalia; and when this was insufficient, he urged the crusaders to assist in conquering Zara, a part of the Venetian territory, which had declared itself in favor of the king of Hungary. To this some of the crusaders objected and retired, but the main body complied. At Zara, the crusaders were met by Alexius, the son of the emperor Isaac, who came to solicit the aid of the crusaders in reinstating his father on the throne of Constantinople, promising ample pecuniary assistance to the objects of the crusaders, as well as the ac-

knowledge of the pope's supremacy. Again Baldwin's influence and persuasive powers were successfully exercised. The crusaders turned aside from the conquest of Palestine, and in 1203 they appeared before Constantinople. The terror of their name made the resistance very brief. The usurper fled, and the emperor Isaac, who had been blinded by his merciless relative, was reinstated. The people were, however, unwilling to fulfil the promises of Alexius to the crusaders, especially that part of them which guaranteed the submission of the Greek church to the Roman pontiff, and riots and tumults arose. Some of Baldwin's soldiers wandering through the streets of Constantinople, found themselves, to their astonishment and disgust, in the Saracen quarter. Their fanaticism was excited by the sight of a mosque in which the followers of Mohammed were performing the rites of their abominable worship. This privilege had been forced from the emperor of Constantinople by sultan Amurath IV. Abandoning themselves to their fury at such a spectacle, they fired the mosque, and the conflagration extended far and wide, destroying some of the most populous parts of the city. The detestation of the Greeks against the barbarians was heightened by this incident, and the crusaders invested Constantinople, and after a 3 months' siege, they stormed the city, which was given up to the soldiery. A new emperor was chosen; old Dandolo would have been elected but for the republican jealousy of the Venetians. Next to Dandolo, the choice fell on Baldwin. The provinces of the empire being distributed among the confederates, the dignity was little more than an empty title. The new emperor did not long retain his power, for Joannices, king of Bulgaria, having been offended by Baldwin, formed a conspiracy against him, in which the Greeks joined extensively. The campaign was commenced by a general massacre of the Frank detachments scattered over the country. Baldwin got together a small force and boldly marched against the invaders, but he was defeated and taken prisoner, and died as such. He was succeeded in the empire by his brother Henry.

BALDWIN II., last French emperor of Constantinople, born in 1217, attained the throne in 1228, while yet a child, died in 1273. Michael Palaeologus, the legitimate successor to the throne, procured an insurrection in Constantinople, and managed, July 25, 1261, to introduce a small body of men within the walls. He was assisted by the Genoese out of rivalry of the Venetians. Michael was at once proclaimed emperor, and Baldwin made his escape into Italy, where he died.

BALDWIN, HENRY, judge of the supreme court of the United States, born in 1779 in New Haven, Conn., died in Philadelphia, April 21, 1844. He was elected for several terms to congress from Pennsylvania. In 1830, he was appointed to the bench of the United States supreme court, and in his judicial as in his

political life he indicated excellent abilities, and thorough integrity.

BALDWIN, THOMAS, D. D., an eminent Baptist minister, was born in Norwich, Ct., Dec. 23, 1753, died Aug. 29, 1826. His parents were poor, and his early culture was very limited; yet he enjoyed the advantages of the public school in his native town, and being studious and inquisitive in his habits, he acquired a prominent standing among his young townsmen for scholarship. At an early age he removed to Canaan, N. H., where, during a religious awakening, he was converted, and soon afterward became connected with the Baptist church. He had been reared in the faith of the Congregational church, of which his parents were members, and it was only after a severe mental struggle that he came to the decision to unite with the Baptists. But having embraced their views, and connected himself with them, by public profession and baptism, he became known at once as one of the firmest and most energetic supporters of their tenets, and one of the ablest and most constant advocates of their civil rights. He united with the church in Canaan in 1781. In 1782, he preached his trial sermon before the church, and was immediately thereupon licensed to preach. In 1788, he was ordained as pastor of the church in Canaan, which he served in that capacity, with great acceptance, for 7 consecutive years. His fame having reached Boston, the second church in that city, which had become vacant by the recent death of their pastor, in 1790, invited Mr. Baldwin to fill that important post. After mature reflection, he accepted the invitation, and continued to serve them till his death, which occurred while attending the commencement of Waterville college, at Waterville, Me. After commencing his labors in Boston, Mr. Baldwin rose rapidly in the public estimation, acquiring distinguished rank as a preacher, and coming to be regarded as one of the first men in his denomination. He took a prominent part in the establishment of Waterville college, Me., and of Columbia college, Washington, D. C. He was an enlightened and efficient supporter of the cause of liberal education generally, and did much to elevate the character of the people in this respect. Beside his pastoral duties and other efforts in the cause of sound learning, he was called more than once to it in a civil capacity. He was several times, during his long pastorate of 35 years in Boston, elected to the state legislature, where he contributed largely to emancipate other religionists from bondage to "the standing order." He was also an efficient member of the convention elected in 1821 to revise the constitution of Massachusetts. His published works consist of a volume in defence of the peculiar tenets of the Baptists, and several sermons delivered on special occasions.

BALE, JOHN, bishop of Ossory in Ireland, best known by his collection of British biography, entitled *Illustrium Majoris Britannia*

Scriptorum Catalogus, born at Cove, in Suffolk, Nov. 21, 1495, died at Canterbury, in Nov. 1563. After embracing Protestantism, he was obliged to flee to Flanders, to escape persecution. Upon the accession of Edward VI., he returned, and was made a bishop in 1552, in which capacity he labored zealously, but made few proselytes. The death of that monarch forced him to flee to the continent once more, and he remained abroad until Queen Elizabeth ascended the throne. In 1560, he was made prebend of Canterbury. He was the author of numerous works. So severe were his attacks upon the Catholic church, that his writings were prohibited as heretical in the highest degree.

BALEARIC ISLANDS, a cluster of islands in the Mediterranean, forming one of the provinces of Spain, situated opposite the kingdom of Valencia, between lat. 38° 36' and 40° 6' N., and long. 1° and 5° E. The most important are: 1, the Majorca, the chief and nearly the centre of the group; 2, Minorca, on the E.; 3, Tviza, on the S. E. of Majorca. Then come 2 smaller ones, Formentera, S. of Tviza; and Cabrera, near and S. of Majorca. These islands, which the Greeks called *χορσίδες*, were at a very early period settled by the Phœnicians, then by the Rhodians; next came the Carthaginians, who extended their sway over all the western part of the Mediterranean. Their leader, Hanno, founded 2 towns, Mago (Mahon) and Tamnon (Ciudadela) in Minorca. The islanders were most expert sailors, and as such did excellent service during the Punic wars; they were a little later noted as successful pirates, and to get rid of them, the Romans, in the year 123 B. C., sent a fleet, under the command of Quintus Metellus, who subdued them, and hence obtained the surname of Balearicus. He was also the founder of 2 cities in Majorca, Palma, the present capital, and Pollentia, now Pollenza. For 5½ centuries these islands remained under the Roman dominion, when, about the year 428, they became an easy conquest for the Vandals who had just subjugated the northern coast of Africa. On the destruction of the Vandalic kingdom by Belisarius, they submitted to the Eastern empire, from which they were afterward wrested by the Goths, the conquerors of Spain. They passed with the peninsula under the yoke of the Moors in 714; toward the end of the same century, in 796, they were taken by Charlemagne, who kept them for 6 years, when they were retaken by the Moors, who retained possession of them until nearly the middle of the 13th century. They were then conquered by James I. of Aragon, who gave them, as a part of the newly created kingdom of Majorca, to his second son, Don Jayme. After the death of the last king of that dynasty, the Balearic islands returned to the crown of Aragon, the destiny of which they henceforth followed, becoming in time an integral part of the Spanish monarchy. The climate of

these islands is generally mild, salubrious, and agreeable, especially in Majorca; during the winter the thermometer seldom falls below 61° F., and the heats of summer are tempered by the sea-breezes. The soil is naturally fertile; but little attention is given to tillage. Mules and asses, which are exported to Spain or France, partridges, quails, hares, rabbits, and other game, are plentiful; and the coasts swarm with fish in great variety and of excellent quality. The chief products for exportation are olives and oil, oranges of Majorca, and figs of Minorca, which were celebrated even in the time of the elder Pliny; red and white wines, of which the latter island alone exports yearly more than 80,000 gallons; brandy, corn, flax, hemp, capers, saffron, honey, and beeswax, &c. The total population of the islands is estimated at a little more than 280,000.

BALÉCHOU, JEAN JACQUES NICOLAS, a celebrated French engraver, born at Arles in 1715, died at Avignon, Aug. 18, 1765. His full-length portrait of Augustus, king of Poland, has been proclaimed the masterpiece of the kind in the 18th century. But Baléchou dishonestly sold the best proofs for his own benefit, and was consequently expelled from the academy of fine arts.

BALEN, HENDRIK VAN, a Flemish historical painter, and the first instructor of Vanduyck and Snyders, born at Antwerp in 1560, died there, 1632. He acquired the rudiments of his art from Adam Van Oort, but went early to Rome to perfect himself. He excelled in coloring, and was an accurate draughtsman.

BALES, PETER, a famous English calligraphist, and one of the first to use short-hand writing, born in 1547, died about the year 1610. His skill is mentioned by Anthony Wood, and in Hollingshed's chronicle for 1575. Evelyn states that he wrote the Lord's prayer, creed, and decalogue, 2 short prayers, his own name, motto, the day of the month and year, in the circle of a single penny. He imitated hand-writings very dexterously, and was employed for that purpose in 1576, by Walsingham.

BALESTRA, ANTONIO, an Italian painter and engraver, born at Verona, in 1666, died April 2, 1740. He renounced a mercantile life for the pursuits of art, and at Venice studied for 8 years the great masters of the Venetian school. He visited other cities of Italy, and, having settled in Rome, gained by his "Defeat of the Giants" the prize offered by the academy of St. Luke. In 1695 he left Rome for Venice, where he became the head of a school, and counted many distinguished names among his pupils. His works are found in many of the galleries and churches of northern Italy. Though he had formed his style from a study of all the great masters, he yet belongs more to the Venetian school than to any other; he was one of the last great artists which that school produced.

BALFE, MICHAEL WILLIAM, musical composer, born in Dublin, May 15, 1808. From the age of 5 he manifested such delight in music

that his father placed him under the instruction of Mr. Bourke, then one of the best composers and violinists in Dublin. When 8 years old, the child played a concerto on the violin at a public concert. Other masters successively taught him, among them Alexander Lee, who was his instructor in thorough base and composition. At the age of 9 he wrote the ballad called "The Lover's Mistake," effectively introduced into the play of "Paul Pry" by Madame Vestris. He lost his father in 1823, and soon after went to London with Mr. Charles Horn, the composer, as an articled pupil for 7 years. He soon became known, and was so highly appreciated, that he was engaged as principal violinist at the Drury Lane oratorio; and in the Drury Lane orchestra, under Mr. T. Cooke. In 1825, he went on the stage. His voice, which he had cultivated, was a rich baritone, but he utterly failed from timidity as Casper, in "Der Freischütz," at Norwich theatre. Immediately after, Count Mazzara, who fancied that he resembled a son whom his wife had lost, took young Balfe with him to Rome, where the countess received him very tenderly. Here he remained for a year, studying under the best masters. After this, still through the bounty of Count Mazzara, he had similar advantages at Milan, where his first production of any pretension was performed with great success. It was a ballet called *La Perouse*, and the expression of the overture, into which was introduced a storm and shipwreck, was much admired. Passing on to Paris, where Rossini held out hopes of an engagement at the Italian opera, he applied himself to study for several months, and at last appeared as Figaro, in the "Barber of Seville," with Sontag as Rosina. The opera, well cast, ran 9 nights in succession. His career as a dramatic singer was triumphant in Italy as well as in France, after this. In 1835 he returned to London, accompanied by his wife, who had been Mademoiselle Lisa Rézer, prima donna of the troupe in Sicily. He sang at the ancient and philharmonic concerts in London, and appeared at Drury Lane in the "Siege of Rochelle" (one of the best of his operas), "The Jewess," and *Chiara de Montenegro*. The "Maid of Artois," written for Madame Malibran, and in which she won one of her greatest triumphs, came next. A variety of operas, among which "Falstaff" deserves particular mention, succeeded, and most of them were popular. In 1839 Mr. Balfe made the experiment of becoming manager at the English opera house, but it did not succeed. He resumed the more congenial and profitable work of composition. His "Bohemian Girl," and "Daughter of St. Mark" filled the treasury at Drury Lane. "The Enchantress," "The Bondman," and many other well-known operas, have since been produced. Mr. Balfe has also been conductor of music at concerts and at the Italian opera. In the spring of 1857, his daughter, Miss Victoria Balfe, appeared on the stage in London, as a vocalist.

BALFOUR, ALEXANDER, a Scotch author, born at Menkie, in Forfarshire, March 1, 1787, died Sept. 18, 1829. He entered upon a mercantile career, and near Dundee, assumed the management of a branch of a large London house. The panic of 1815 plunged him into bankruptcy, and he then devoted himself seriously to literary composition, with which he had been long accustomed to amuse his leisure. He published in 1819 his first novel, entitled "Campbell, or the Scottish Probationer." The same year he edited the works of his friend, Richard Gall, and began to contribute poems and tales concerning Scottish manners, to the "Edinburgh Review." In 1820 he published a volume of poems, and in 1823 his second long novel appeared, entitled the "Foundling of Glenhorn, or the Smuggler's Cave." He held a position as clerk in a publishing house of Edinburgh, and, in 1827, received from the national treasury, through the kindness of Mr. Janning, a donation of £100. His last work was a novel entitled "Highland Mary," and an edition of his select works was published after his death, under the title of "Weeds and Wild Flowers."

BALFOUR, ANDREW, a Scotch naturalist of the 17th century. He had great wealth, and pent a large part of his fortune in founding a botanical garden and museum at Edinburgh. His name has been given to the *Balfouria*, a tribe of plants native in Australia.

BALFOUR, Sir JAMES, a conspicuous actor in the Scottish civil wars, which ended in the enthronement of Mary, queen of Scots, died in 583. Originally brought up in the Roman Catholic church, he had espoused the Protestant cause, and in 1547 was with other reformers taken prisoner and sent to France. On Knox's liberation and return to Scotland, the cause of Protestantism was apparently declining, and for this reason Balfour adjured its heresies, and was again gathered into the true fold. His abilities and tact were useful, and he was speedily appointed to some important places. As he enjoyed the confidence of the government, he was high in office on the arrival of Mary in Scotland, and was with the queen at Holyrood on the night of Rizzio's assassination. Popular rumor assigned to Balfour prominent share in the murder of Lord Darnley, Mary's husband, but he contrived to outlive all suspicion. In 1567 he was appointed captain of Edinburgh castle. A change in Balfour's convictions was forced upon him, for he saw that a powerful party had been formed against Mary; and the policy of an alliance with them overcame all scruples. He held the castle of Edinburgh against the queen, and was the means of delivering up Mary's letters into the hands of her enemies. He afterward surrendered the castle for various considerations. In the breaking out of the civil war, Balfour died with the regent Murray, but after Mary's imprisonment in England, he took part in conspiracies for her restoration, although at the time professing adherence to the regents Mur-

ray and Morton. His last public act was furnishing the evidence of Morton's guilt in the murder of Darnley, for which Morton was condemned and executed.

BALFOUR, JAMES, a distinguished Scotch lawyer and lecturer on moral philosophy and law in the university of Edinburgh. He wrote 2 pamphlets against David Hume's deistical writings, which procured him Hume's esteem. He died March, 1795, at the age of 92.

BALFOUR, WALTER, first a minister in the church of Scotland, afterward a preacher in the Universalist denomination in the United States. He was born in the parish of St. Ninians, Stirlingshire, Scotland, about 1776, died Jan. 3, 1852, in Charlestown, Mass. He was educated for the ministry of the Church of Scotland by Mr. Robert Haldane, who, from a benevolent desire to spread the reformed gospel in Scotland, devoted a part of his large fortune to the education of 25 young men for the ministry. After preaching a few years in his native country, Balfour emigrated to America. He was still in the faith of the Scottish kirk, but at the age of 30 became a Baptist. A few years later some circumstances, among which he always reckoned the letters of Prof. Stuart of Andover to the Rev. W. E. Channing, written in 1819, led him to think of the doctrines of Universalism, and finally to embrace them. In 1823, he avowed his opinions, and was from that time a laborious writer and preacher in support of the doctrines he then espoused.

BALFROOSH, an important commercial town of Persia, in the province of Mazanderan, situated on the river Bahbool, about 12 miles from the southern shore of the Caspian sea; lat. 36° 37' N., long. 52° 42' E. The country around is low and marshy, though fertile; but, notwithstanding its position, apparently so unfavorable to maintaining a large inland trade, it is inhabited chiefly by merchants, mechanics, and their dependents, and no town of Persia, unless perhaps Ispahan, makes a finer display of merchandise. The city is built in a forest of lofty trees, by which the houses are so completely hidden, that, except in the bazaars, it has no appearance of being a large town. Its streets are wide, and though unpaved, are kept clean; the houses substantially built, and roofed with tiles. The bazaars constitute the only objects of interest; they consist of ranges of well-built shops extending upward of a mile, and filled with wares of all descriptions. There are 10 principal caravanseries, several of which are let as warehouses; the place also has upward of 80 colleges, being as much addicted to learning as to commerce. There is an excellent road leading to Meshedi-Ser, the port of Balfroosh on the Caspian. The river is crossed by a bridge of 9 arches. In 1822, when Fraser visited the city, it was supposed to contain 200,000 inhabitants. It has since been ravaged by the plague and cholera, and probably does not contain one-fourth that number. It is a very unhealthy place, even now.

BALGUY, JOHN, an English divine, born at Sheffield, in Yorkshire, Aug. 12, 1686, died at Harrogate, Sept. 21, 1748. He was educated at St. John's college, Cambridge, received his bachelor's degree in 1706, and, after leaving the university, devoted himself to teaching. He took orders in 1710, and was presented to the donative of Lamesly and Tanfield. Here he was both diligent in the performance of his pastoral duties and an active writer in the theological discussions of the time. He wrote 2 books under the signature of "Silvius," in defence of Bishop Hoadley, in what was termed the Bangorian controversy. He next wrote in answer to deistical works, and attacked the principles of Lord Shaftesbury in a "Letter to a Deist Concerning the Beauty and Excellency of Moral Virtue, and the Support which it receives from the Christian Revelation." In 1729, he became vicar of North Allerton, in Yorkshire, in which preferment he remained till his death. His next important publication was entitled "Divine Rectitude; or, a Brief Inquiry Concerning the Moral Perfections of the Deity, Particularly in Respect to Creation and Providence." His controversial works, which are numerous, are written with marked courtesy. He committed to the flames a large number of his sermons, that his son, who succeeded him in the ministry, might be obliged to exercise himself in composition, and not depend upon his father's labors.

BALGUY, THOMAS, son of the preceding, an English divine, born at Lamesly, Sept. 27, 1716, died at Winchester, Jan. 19, 1795. He obtained the living of North Stoke, in Lincolnshire, and was subsequently made archdeacon of Salisbury and Winchester. In 1781, he was offered the bishopric of Gloucester, but declined it on account of the delicate state of his health. He held the archdeaconry of Winchester till his death. He was the author of various books, among them a very able treatise entitled "Divine Benevolence asserted and vindicated from the Reflections of Ancient and Modern Skeptics" (London, 1782).

BALHARRY, a town and fortress of Hindostan, in the presidency of Madras, 187 miles from Seringapatam; pop. about 80,000. The district of Balharry has an area of 13,056 sq. m., pop. 1,229,599. It has been held by the British since 1800.

BALI, a remarkable island of the Malay archipelago, although only of the 4th magnitude in extent. Van Carnbee, the accurate hydrographer of Netherlands India, estimates its superficies 57.8 myriametres square, or 1,685 geographical sq. miles; length, 74, and greatest breadth, 50 geographical miles. It is generally volcanic, except the southern peninsula, comprising Badong, which is of calcareous formation. A mountain backbone, a continuation of the Cordillera of Java, extends across the island from west to east, and several peaks attain great elevation—Gunung Agung, known to mariners as the peak of Bali, 11,326 feet high; Gunung Batur, an active volcano, 7,000 feet. A destructive

eruption took place Nov. 22, 1815, 7 months after the great eruption of Timbora, in the neighboring island of Sumbawa, the most terrific known in the annals of the world. By the eruption of Batur a great number of the inhabitants of Bali perished; and the ashes from Timbora, though distant 170 miles, which covered this island to the depth of 1 foot, caused the death of many more. But these destructive elevations are also the chief sources of the productiveness and prosperity of the island. There are a number of remarkable fresh water lakes in the mountains, from 3 to 12 miles in circumference, and some 50, and others even 200 and 300 fathoms in depth. They are remarkable in being subject to a tidal influence. The natives readily obtain from them an abundant irrigation, the main cause of the great productiveness of the island, which exports subsistence for 250,000 people, beside feeding its own dense population. M. Van den Broek, a Dutch commissioner, estimated the number of inhabitants in 1818 to be 987,500. The Balinese princes claim to have 241,000 men able to bear arms, and this, allowing them to be one-fifth of the whole, would give 1,205,000 souls. The export of rice in 1845 was 330,000 piculs, or 21,000 tons, and it is now estimated at not less than 32,000 tons. Large quantities of bullocks and *dendeng*, or jerked meat, are also exported; the rice, chiefly to Singapore and China, and the bullocks to Java and Mauritius. Other exports are hides, cotton of a fine staple, tallow, buffalo-horns, tobacco, cocoanut-oil, sapan wood, and safflower. The chief imports are English prints, colored listing cloths, Turkey-red chintzes, opium, gold thread, iron, steel, lead, tin, precious stones, arrack, raw silk, fine crockery-ware, mirrors, and trinkets. The imposts on trade, though differing in the several principalities of the island, will average about 4 per ct. on all purchases, to be paid to the prince, which includes all charges. The only currency is Spanish dollars and *petis* or *pickis*, a small brass coin with a hole in the centre for the purpose of stringing together, worth about 600 to the dollar. Chinese cash are also current. Bali has no good harbors, but during the S. E. monsoon the roadsteads of Baliling, Tebonkos, and Sangsit, on the N. coast, and during the N. W. monsoon, Ujong, Kasumba, and Panti Bara, on the eastern and southern coasts, offer good anchorage for vessels of the largest class. The fauna consists chiefly of wild hogs, which are very numerous, and a small mountain deer. A few tigers have been met with in the thinly peopled western peninsula, only 1½ mile distant from Java; and they evidently come from this island. Surprising quantities of birds and of domestic fowls abound. Salted ducks' eggs, an item of export, sell for 1 *petis* each, or \$1.60 per 1,000.—The Balinese—and they are the only people in the archipelago that do so—observe Hindoo rites, and are divided into 4 castes, the Bramana, Satriya, Waisya, and Sudra; and hence a direct origin from Hindu-

tan is claimed for them; but there is no historical evidence to substantiate this. Language, features, and customs, very clearly indicate that the Balinese are descended from colonists from Java, which was once a great seat of the Hindoo faith. The Balinese are, however, much superior to their progenitors—are larger, stronger, and have lighter complexions. The countenance of the men shows more intelligence and resolution than is to be seen among any other people in the archipelago, and the women are noted for their pleasant looks and industrious, amiable character. The custom of the latter in wearing the dress no higher than the armpits, displays some very fine busts to the admiration of the European stranger. The terrible superstition of incremation is practised, but only partially among the noble classes, and without the chief horror of the Hindoo suttee—the Balinese widow is invariably poniarded by her nearest relative before her body is burned.—The Balinese are skilful artificers in iron and gold, and manufacture some fire-arms. Their nobles have literary tastes, and many have large libraries of MSS., mostly translations from Javanese and Malay literature. They write with a steel point on the lontar leaf (*Borassus flabelliformis*).—Though it is justly said that a larger degree of security than is usually to be found among Asiatics must exist among the middle and lower classes to have promoted the present industry and remarkable productiveness of the island, yet its many petty political subdivisions are evidences of a rude and semi-barbarous condition. There are 7 principalities or rajahates : Karang Assam, pop. 150,000; Baliling, 130,000; Badong, 130,000; Klonkong, 97,500; Tabanan, 180,000; Mangooi, 160,000; Gianjeer, 160,000. The prince of Klonkong, though having the smallest territory, is regarded with especial reverence, and wields a religious suzerainty over the island in consequence of his alleged descent from Dewa Agung, the deified progenitor of the Balinese. The prince of Karang Assam is the most powerful, has reduced the neighboring island of Lombok under his sway, and styles himself king of Salemparan. The independence of Bali was never disturbed by Europeans till 1846, when, owing to some alleged insult to an envoy, the Dutch attacked the chief fortress of Baliling, captured it, and induced all the Balinese princes to accede to a humiliating treaty. In 1847 they refused to carry out its stipulations, the Dutch sent another expedition, a fleet of 13 large war vessels and 12 gun-boats, carrying 70 guns and 2,845 troops, which, after an attack upon Djaga Raga, in Baliling, were bloodily repulsed, and compelled to retreat precipitately to their ships, leaving behind them 14 officers and one-third of the rank and file dead and wounded. This defeat, owing, as Van Carnbée says, not so much to the strength of the place assaulted as the “frenzied valor” of the Balinese, is probably one of the severest checks a European force ever experienced in the eastern seas. A subsequent expedition was more suc-

cessful, and induced the Balinese princes to make many concessions to the Netherlands government, but not, however, allowing any direct political control over the island.

BALIKESR, or BALU-KISSAR, or BALIK-SHEER, a town of Anatolia, 75 miles S. W. from Brusa. It is built of unburnt bricks. It has the tomb of a celebrated Mohammedan saint, a manufactory of felt-cloth for military clothing, and trades considerably in silk fabrics.

BALILING, a principality of the island of Bali; pop. 180,000. The exports are rice and bullocks—chief trade with the Bughis of Celebes. The Dutch were signally defeated in an attack upon the fort of Djaga Raga in this principality in 1847.

BALIOL, or BALLIOL, EDWARD, son of John Baliol, of Scotland, died at Doncaster in 1368. He shared his father's captivity in the tower, and accompanied him to Normandy. From Normandy he was invited over by the English king on two occasions in 1324 and 1327, merely to threaten Robert Bruce, but in 1332 he was called over by the dispossessed Anglo-Norman barons to head them in a daring incursion into Scotland to recover their Scottish estates. Edward Baliol heartily fell in with the proposal. Yet the force of Baliol, Lords Percy, Wake, and Beaumont, only consisted of 300 horse and a few footmen. This small force set sail from Ravenspur, on the Humber, as Edward III. had prohibited them from marching through the northern counties and violating the neutrality laws. Baliol entered the Frith of Forth, landed at Kinghorn, in Fifeshire, and defeated the earl of Fife. With an army increased by this success to 8,000 men, he marched across the country to meet the earl of Mar encamped on the opposite side of the river Earn, with a force of 80,000 men. A second Scottish army lay within a few miles of Baliol's flank. In dead of night the invading force, reduced to desperation, crossed the Earn where it is fordable, and attacked the surprised Scots, who regarded the little force in their front as a certain prey. Baliol's foolhardy forces achieved an astonishing triumph at this slaughter of Duffin Moor; 18,000 Scots, including the earls of Mar and Moray, and hundreds of knights and barons, lay dead on the field. The loss of Baliol's Anglo-Scots did not exceed a few gentlemen and soldiers. From Duffin Moor he marched to Perth, where he defeated the commander of the second army, the earl of March. Now all those disaffected with the rule of Bruce came flocking to his standard; and he was crowned king of Scotland at Scone, on Sept. 24, only 7 weeks after landing at Kinghorn. Baliol having privately rendered to Edward III. of England homage and allegiance, lay careless at Annan, where he was surprised in his turn by the new earl of Moray, brother of him slain at Duffin, and barely escaped a naked fugitive to England, Dec. 16, after a reign of 8 months. Edward III. now took up the cause of his vassal, and

the battle of Halidon Hill, July 10, 1188, again placed him on the Scottish throne. The Scots were so weakened by this defeat that Baliol might have kept his seat had he not been imprudently unpatriotic and obsequious to the English monarch. By a treaty he gave up Berwick-upon-Tweed, and surrendered Berwickshire, Roxburghshire, Selkirkshire, Peebleshire, and Dumfriesshire, together with the Lothians. The Scottish nation now turned with disgust from him as from an English traitor, and looked to David, the infant son of Robert Bruce, to restore their mutilated nationality. While Edward Plantagenet was engaged in his French wars, the young king David, since 1341, kept winning fortress by fortress from Edward Baliol's hands. In 1355, Edward III., returned from his French wars, desired to put an end to the perpetually troublesome Scottish question, by annexing the whole kingdom to the English crown, as his grandfather had annexed Wales. He offered to purchase Baliol's rights to the Scottish throne in consideration of a present of 5,000 marks and a yearly annuity of £2,000 sterling. Edward Baliol, advanced in years, and without children or near of kin, gladly assented to these terms. He appeared before Edward attired with all the symbols of majesty, formally divested himself of them, and laid his golden crown at the feet of the English king. He retired with his wealth into private life, and died childless as a Yorkshire landowner, and with him ends the line of Baliol.

BALIOL, JOHN, a Scottish knight and nobleman of the blood-royal, born about 1259, died in 1314, famous, or infamous, for his rivalry of Robert Bruce, and his intrigues with Edward I. of England, which were the source of so much evil to Scotland. On the death of Alexander III. of Scotland, contemporary of Edward I., son of Alexander II., and grandson of William the Lion, the inheritance of the Scottish crown remained in Margaret, princess of Norway, daughter of Margaret, the deceased sister of the late king. She dying, shortly after her father's death, pending negotiations of marriage between herself and Edward I., the throne of Scotland became vacant, with no direct heir, and a disputed succession. The principal claimants were John Baliol, Robert Bruce, and John Hastings, beside others of inferior note. These 3 were descended from one lineage, namely, the 3 daughters of David, earl of Huntingdon, brother of King William the Lion, neither Alexander II. nor Alexander III. having any surviving issue, or nearer collateral relatives. The eldest of these princesses, Margaret, given in marriage to Alan, lord of Galloway, left one daughter, Dervogill, or Dornagill, who was married to Sir John Baliol, father of the present claimant. The second, Isabella, was married to Robert Bruce, and bore to him Robert Bruce, the second, who married the heiress of Carrick, and had, by her, Robert Bruce, the pretender to the crown. The youngest daughter was married to Henry Hastings, the father of John

Hastings, the rival to the noblemen above named. The ground of his pretensions are not known. Those of Bruce were founded on the fact, that, although his grandmother was the second-born of the earl Huntingdon, her son and his father was older, in point of time, than the father of John Baliol, and, therefore, heir-male of David, earl of Huntingdon. This claim is, of course, preposterous, according to the true principles of hereditary descent; yet it failed not of its assertors, and the barons of the realm, with whom the decision rested, were so widely divided, that no decision could be had; wherefore they resolved to refer it to the arbitrament of Edward of England, all parties, including the rival claimants, swearing to abide peaceably by his decree. He decreed it to Baliol, rightfully, in point of law; but wrongfully—if it be true, as the Scottish writers assert that he did so—in making it a condition, with Baliol, before giving his voice in his favor, that he should do homage to the king of England, for the crown of Scotland, thereby owning the latter to be a dependency of the former. John Baliol was accordingly crowned king of Scotland at Scone, in 1292; and, in the next year, with all the principal nobles of his party, swore allegiance to Edward at Newcastle-upon-Tyne, whither he went on summons, leaving his own kingdom as an inferior at the order of his superior. Shortly afterward, being cited as a vassal to appear at London, at the head of his power, to aid his superior, Edward, in the war which he had just undertaken against France, perceiving the fatal consequences of his oath, he renounced his allegiance, renewed his alliances with France, and prepared for war. In this war, eminently just as it was, Scotland was defeated and subjugated in an incredibly short time; for Berwick-upon-Tweed being taken by stratagem, and Dunbar by the treacherous defection of Robert Bruce, Edinburgh and Stirling castles were soon surrendered; when Baliol, being driven into the castle of Forth, and there closely besieged, resigned to King Edward all right and title to the crown of Scotland, for himself and his heirs forever, by a regular charter duly made and sealed, with the hand and seal of King John, in the fourth year of his reign, all the nobles of Scotland, including the heirs of the blood-royal, confirming the same. After this, Edward assembled all the barons and nobles of Scotland at Berwick-upon-Tweed, where they swore themselves his liegemen; did homage to him as their sovereign lord and supreme governor, and signed an instrument, since famous as the ragman's roll, to the same effect—one nobleman only, the famous Sir William Douglas, refusing to put his hand to so base a document; for which crime he was held in durance until he died in prison by the cruel conqueror. John Baliol, with his son Edward, was detained for some years in ward in London; until Edward, satisfied that he had nothing to apprehend at his hands, released him, detaining his son Edward as his

hostage, and suffered him to return to Scotland. There, however, he found himself held in such hatred and contempt, that he crossed back, of his own accord, to England, renouncing Scotland forever, and not long afterward retired into Normandy, where he had estates, and where dying in his castle of Gailliard, he bequeathed all his lands, on that side the sea, to his son Edward, who had been released from his captivity, and allowed to join his father in France. John Baliol appears to have been a weak and nearly imbecile man; but he hardly deserves the load of obloquy which has been reaped on his memory by the writers of Scotland; who should remember that, with a few plended exceptions—such as Sir William Douglas and Sir William Wallace—all the nobility of Scotland, and especially his rival Robert Bruce, were guilty of the same treason with himself; and further, that there was never a period, from this time until the extinction of the Scottish independence, when a large minority, if not an actual majority, of the Scottish nobles were not traitors to their king and country, and either open adherents or secret service men of the English crown.

BALIZE, or BELIZE, or, as it is sometimes called, British Honduras, is an anomalous British settlement or establishment, situated on the eastern coast of the peninsula of Yucatan, fronting on the bay of Honduras. Its name is variously derived from a famous Scotch freebooter who resorted here, named Wallace (pronounced by the Spaniards *Walice* or *Bace*), and from the French *balise*, a beacon. The last derivation is probably most correct, since no doubt some signal or beacon was used here, to guide the freebooters to the common rendezvous, after they had eluded pursuit behind the dangerous reef, dotted with islets, which protects the coast of Yucatan, and through which large ships find it difficult to penetrate. Belize, or as it is still styled in official documents, "Her Majesty's Settlement in the Bay of Honduras," owes its origin to the logwood cutters, who frequented the coasts of Yucatan, Honduras, and Nicaragua, after the decline of piracy in the sea of the Antilles. Most of them had been free companions, and were well acquainted with the coast and its resources. The district now called Belize was rich in dye-woods, and at once became a principal place of resort with the English cutters. Although thus industriously occupied, they so retained their old habits as to make frequent incursions on the logwood establishments of the Spaniards, and appropriate the proceeds of their forays. The attempts of the Spaniards to exclude them were generally successfully resisted. The most formidable of these was made in April, 1754, when, in consequence of the difficulty of approaching the position from the sea, owing to the numerous reefs and shoals, an expedition was organized inland, at the town of Peten, in Guatemala, consisting of 1,500 men. After a long and weary march, on approaching

the coast, they were met by a body of 250 English, and completely defeated. The logwood cutters were not again disturbed for a number of years; and their position had become so well established, that in the treaty between England and Spain of 1762, the former power, while agreeing to demolish "all fortifications which English subjects had erected in the bay of Honduras, and other places of the territory of Spain in that part of the world," nevertheless insisted upon a clause in favor of the cutters of logwood, in the following terms: "And his Catholic majesty shall not permit his Britannic majesty's subjects or their workmen to be disturbed or molested, under any pretext whatever, in their said places of cutting and loading logwood; and for this purpose they may build without hindrance, and occupy without interruption, the houses and magazines necessary for their families and effects; and his C. M. assures to them the full enjoyment of these advantages and powers in the Spanish coasts and territories, as above stipulated, immediately after the ratification of the present treaty." To insure the observance of this treaty, the British government sent out Sir William Burnaby, who not only settled the limits within which the English were to confine their wood-cutting operations, but also drew up for their government a code of regulations or laws, which, under the title of the "Burnaby code," continued to exist until within a few years. Successful in all their contests with the Spaniards, and now strengthened by the recognition of the crown, the British settlers did not fail to assume a corresponding high tone, and to make fresh encroachments on the Spanish territory. The Spaniards, alarmed and indignant, and alleging that the settlers not only abused the privileges conceded to them by the treaty, but were deeply engaged in smuggling and other illicit practices, organized a large force, and on Sept. 15, 1779, suddenly attacked and destroyed the establishment, taking the inhabitants prisoners to Merida, and afterward to Havana, where many of them died. Those who survived in 1782 were liberated, and allowed to go to Jamaica. Strong representations were made to the British government for redress, but the allegations of the Spaniards were found to be so well supported, that they were dismissed. For 2 or 3 years the establishment seems to have been abandoned; but in 1783, a part of the original settlers, with a considerable body of new adventurers, had revived the place, and were actively occupied in cutting woods. On Sept. 8 of this year, a new treaty was signed between Great Britain and Spain, which set forth that in order "to prevent as much as possible all causes of complaint and misunderstanding heretofore occasioned by cutting of wood for dyeing or logwood; and several English settlements having been formed and extended under this pretence upon the Spanish continent, it is expressly agreed that his Britannic majesty's subjects shall have the right of

cutting, loading, and carrying away logwood in the district lying between the river Wallis or Balize and Rio Hondo, taking the course of those two rivers for unalterable boundaries, to wit, &c., &c., to the end that a good correspondence may reign between the 2 nations, and that the English workmen, cutters, and laborers may not trespass from an uncertainty of boundaries." The article further provided that the concessions therein contained "should not be considered as derogating from the rights of sovereignty of the king of Spain" over the district in question, and that all the English, wherever dispersed on the Spanish territories, should concentrate themselves in the district thus defined within 18 months. Affairs, notwithstanding the explicit stipulations of this treaty, do not appear to have proceeded favorably, for, 8 years after, in 1786, a new treaty was made between Great Britain and Spain, in which the king of Spain, "from sentiments of friendship toward his Britannic majesty and the British nation," grants an extent of territory additional to that conceded in the treaty of 1783, embracing the territory between the river Siboon or Jabon and the river Balize, so that, collectively, the grants embraced the entire coast between the river Siboon, in lat. 17° 20' on the south, and the Rio Hondo, in lat. 18° 30' on the north, a coast line of about 90 miles, with the adjacent islands and bays. But these extended limits were coupled with still more rigid restrictions. The English might cut and export wood, or any "other fruits of the earth purely natural and uncultivated," but they were expressly prohibited from ever using this permission "for establishing any plantation of sugar, coffee, &c.," or manufactures of any kind; and "the lands in question being indisputably acknowledged to belong of right to the king of Spain, no settlements of that kind, or the population which would follow, could be allowed." The erection of all fortifications was expressly forbidden, as was also "the formation of any system of government either civil or military." And finally, to see that the precise and stringent provisions of the treaty were carried out, a Spanish officer or commissioner was to visit the establishments twice a year, "to examine into the real situation of things." Language is incapable of expressing more precisely the intention of Spain to retain her rights of sovereignty over the district, the use of which was conceded to the English settlers for the sole purpose of cutting logwood and mahogany, and exporting the fruits of the earth purely natural. It is not to be supposed that a population composed of so wayward and lawless a set of men, at a distance from England, was remarkably exact in its observance of either the letter or spirit of the treaty of 1786. They seem to have given great annoyance to their Spanish neighbors, who eagerly availed themselves of the breaking out of war between the two countries in 1796, and the consequent suspension of treaty obligations, to concert a formidable attack on Balize, with a view to a com-

plete annihilation of the establishment. They concentrated a force of 2,000 men at Campeachy, which, under the command of Gen. O'Neill, set sail in 18 vessels for Balize, and arrived off the place July 10, 1798. The settlers, in anticipation of their approach, and effectually aided by the English sloop of war Merlin, had strongly fortified a small island off the harbor, called St. George's Cay. From this position they maintained a determined and successful resistance against the Spanish force, which, after a contest of two days' duration, was obliged to abandon its object, and retire to Campeachy. This was the last attempt to dislodge the English, who took new courage from their success, and, it may be presumed, did not thereafter pay much regard to the stipulations of previous treaties. It is proper to remark that the defeat of the Spanish attack of 1798 has been adduced as an act of conquest, thereby permanently establishing British sovereignty over the territory. But the partisan writers, who take this view, entirely forget or wilfully overlook the important fact, that in 1814, Great Britain, by a new treaty with Spain, revived and reenacted all the provisions of the treaty of 1786. They forget, also, that the British government, until possibly within a few years, never pretended to any rights acquired in virtue of this successful defence; for as late as 1817-'19, the acts of parliament, relating to Balize, always refer to it as "a settlement for certain purposes, in the possession and under the protection of his majesty, but not within the territory and dominions of his majesty, &c." The "certain purposes" here referred to, are clearly those set forth in the treaty of 1786, and revived in 1814. But this is not all; after the independence of the Spanish American provinces, Great Britain, not knowing within which new republic the territory of Balize might fall, sought to secure her rights there, by incorporating the provisions of the treaty of 1786, in all of her treaties with the new states. It was, in fact, incorporated in her treaty of 1826 with Mexico; was included in the "project" of a treaty which she submitted to Señor Zebadua, the representative of the republic of Central America, in London, in 1831, but which failed, from the want of adequate power to negotiate on the part of that representative; and was incorporated also in the project of a treaty submitted to New Granada in 1835, from which it was omitted by New Granada, as relating to territory beyond, and not within, her jurisdiction. Great Britain, therefore, is without any legitimate rights in Balize, beyond those conveyed by the treaties already quoted, which define, with the greatest precision, the area within which these qualified rights may be exercised. But it appears from a despatch of Sir George Gray, colonial secretary, dated in 1836, that pretensions had been then set up to an additional wide extent of territory, including the entire coast as far south as the river Sarstoon, and inland to the meridian of

Garbutt's falls, on the river Balize. (See letter of Sir George Gray to Saml. Cox, Esq., Nov. 23, 1836.) No pretext has yet been put forward to justify this new assumption, whereby the territory of Balize was more than doubled; and it stands as a simple, arbitrary act of power against a weak and unresisting state. Still the British crown hesitates to constitute Balize as a colony, nor will it guarantee titles to lands within the limits so positively set forth. Politically, Balize is still a settlement, "for certain purposes, under the protection, but not within the dominion of the British crown." It is called "an establishment," and is governed by a superintendent and local assembly, dependent on the governor of Jamaica. This anomalous state of things has no doubt seriously interfered with the material prosperity of Balize; and while it must be insisted that Great Britain has no technical rights of sovereignty over the territory, yet it cannot be denied that the enterprise of her subjects has rescued a desolate coast from the savage dominion of nature, and carried industry, laws, and a qualified civilization where none existed before, and where, left to the control of the Spanish race, none could have existed to this day. In the interest of civilization and humanity, there can be no doubt the occupation of Balize by the English is a fact not to be regretted; and the sooner that occupation takes a determinate form, the better for the establishment and the world. It was probably these considerations which induced Mr. Clayton, American secretary of state, to consent to the exclusion of Balize from the operation of the convention of 1850, between the United States and Great Britain, whereby both powers bound themselves "not to occupy, fortify, or colonize any part of Central America," making the limits of Balize, as laid down by Sir George Gray, and as extending from the Rio Hondo on the north, to the Rio Sarstoon on the south, and inland to the meridian of Garbutt's falls on the river Balize, we have a territory about 160 miles long, by not far from 50 miles wide at its broadest part, equal to an area of 9,600 square miles. The approach to coast is through cays and coral reefs, and the channels for ships are intricate and dangerous. For nearly 60 miles vessels wind among innumerable islets, some mere walls of rock, covered with sand, and others loaded with verdure to the water's edge. Between these and the mainland is a broad belt of still water, deep, but so clear that the eye can nearly everywhere penetrate to the bottom, and watch the various forms of marine life which flourish there. The coast itself for some miles inland is low and swampy, thickly covered with forests of mangroves and tropical jungle. But as we ascend the river the land rises and assumes an entirely different character, and spreading out in what, in the western states, are called "bottoms," of rich alluvial earth, varying in width from 50 yards to a mile. Beyond these, and parallel to the rivers, are vast tracts of sandy, arid

land, covered with forests of red pine, called "pine ridges," the favorite abodes of the cougar, peccary, and other wild animals. Still further inland, ascending the rivers, the pine ridges give place to others of a different character, called "cahoon ridges." These have a deep, rich soil, and are covered with myriads of palm trees, known as "cahoon palms," of which the arching branches form cool, beautiful vistas, scarcely penetrated by the rays of the sun. Succeeding these are broad savannas, studded with clumps of trees, through which the streams which descend from the mountains wind in every direction. The mountains themselves rise in a succession of ridges, parallel to the coast, the first of which, called the Manati hills, are from 800 to 1,000 feet above the level of the sea. Beyond these are the Cockscorn mountains, estimated to be at least 4,000 feet high. From these mountains descend numerous streams, through wild, picturesque valleys, forming many cataracts, and in some places subterranean passages through the rocky barriers which interpose between them and the sea. Not less than 16 of these streams, sufficiently large to be called rivers, enter the ocean, between the Hondo and the Sarstoon. The climate of Balize is hot and damp, but favorably influenced by the full exposure of the country to the ventilation of the trade winds. The average mean temperature for the year 1848, was 79° F.; the amount of rain which fell during the same period, 46½ inches. Balize is not troubled by hurricanes, nor has it been seriously affected by the earthquakes which have, at different times, caused so much alarm in the neighboring Central American states. It has never been afflicted by epidemics, except the cholera. Yellow fever frequently occurs, but sporadically, and never in an endemic form. Although a number of Europeans reside in Balize, without apparent serious inconvenience, yet the climate is not regarded as favorable to the white race. Negroes and their descendants, however, find here a most congenial climate, and numbers of them reach an age of more than 100 years. There seem to be no aboriginal tribes within the limits of Balize except some Caribs, who have fled into it as a place of refuge. The present population consists principally of negroes, originally brought into the country as slaves, and colored persons sprung from the intercourse of Europeans with Africans and Indians. They are engaged in cutting mahogany and dyewoods, and in fishing; a few of them cultivate small patches of ground. The scanty white population is occupied in commerce. The number of inhabitants is stated, in the superintendent's returns for 1845, to be:

Whites.....	240	males.....	156	females.....	899	in all
Colored.....	6,705	"	3,655	"	9,410	"
Total.....	6,995	"	3,814	"	9,809	"

In 1828 the population numbered 5,179, and consequently had nearly doubled itself in 23

years. The Indians are probably included in the enumeration of the colored races. The number of slaves manumitted in 1834 was 1,901, and the compensation paid £101,898. In 1848 the total population of Balize was estimated at 14,000; but in consequence of the civil troubles of the adjacent states, but particularly of Yucatan, it has become a favorite place of refuge for the distracted inhabitants, so that now the number of inhabitants is estimated at about 30,000.—The town of Balize itself, which is situated in a swamp, at the mouth of the river Balize, contains, ordinarily, about 5,000 inhabitants; but during the Christmas festivities, when the mahogany cutters come into it, this number is fully doubled. Previous to a destructive fire which occurred in 1856, the town had not far from 1,500 houses, stretching for a mile and a half along the shore. The dwellings of the wealthier inhabitants are large and spacious, and have a thrifty and respectable appearance. Beside the government houses, the court-house, jail, barracks, a fine iron market, and other public buildings, there is the brick church of the established religion, and the Methodist, Baptist, and Presbyterian chapels. Lately some large and costly fire-proof warehouses have been built, which contribute greatly to the beauty of the place. Balize derives little support from agriculture; its supplies of cattle, fruit, &c., being chiefly obtained from Bacalar in Yucatan, and Omoa and Truxillo in Honduras. It obtains its principal importance from being the commercial entrepot and depot for the neighboring Spanish states of Yucatan, Guatemala, and Honduras. This source of prosperity, however, is fast drying up, from the diversion of trade on the Pacific to Panama, and from the opening of direct commerce between several of the states and the United States and England. In 1848 the total value of its imports was \$880,000, of which \$260,000 came from the United States. Its exports, for the same year, were \$1,765,000. The inward tonnage was 18,521 tons; the outward, 18,626 tons. In 1855 the imports had considerably fallen off, from the causes already mentioned, but the exports had increased to \$2,260,000. The inward tonnage for that year was 31,124 tons; the outward, 27,808 tons. The principal product of Balize is mahogany, of which the average yearly amount exported, for the past 10 years, has been 8,000,000 feet, or 20,000 tons, equal, for the whole period, to 200,000 tons, requiring 160,000 trees.—The natural growths of the country are as various as valuable. In the forests are the cabbage tree, cedars, pines, iron-wood, silk cotton trees, logwood, fustic, and braziletto, and, the most important of all, the mahogany tree. Sarsaparilla is collected in the southern districts. The mahogany tree and logwood are the great staples of Honduras. There are also several other woods of great value, as rosewood, palmetto, dark and beautifully figured, Santa Maria, which possesses the properties of the Indian teak,

caoutchouc or India rubber, sapodilla, and innumerable others. The most common fruits are oranges, lemons, limes, shaddocks, mangoes, guavas, cashoo nuts, tamarinds, avocado pears, pomegranates, wild plums, and grapes. The agricultural products consist of Indian corn, rice, yams, and plantains. Arrowroot is cultivated in small quantities. The soil is extremely well adapted for the culture of coffee, cotton, sugar, and indigo, but no great quantities of these have hitherto been raised. Cacao grows spontaneously and in great quantities in the thickets. Cochineal is brought in from the interior and exported to a considerable amount. A few garden vegetables are cultivated.—The mineral productions are equally valuable. Veins of fine marble and mountains of alabaster are known to exist. Valuable crystals have been found in the interior, and fine specimens of felspar lie along the banks in many places, and are often used in ornamental stucco work. Gold has at various periods been found in the Roaring Creek, a branch of the Balize, but it is uncertain from whence it has been derived. Quantities of lava and volcanic substances have been found in different situations. Laboring Creek, about 100 miles inland, on the Balize, is remarkable for the petrifying properties which it possesses. Its waters have a powerful cathartic effect on strangers, and a healing property when applied externally to ulcers.—The indigenous animal kingdom comprises many valuable fur-bearing species, as ounces, panthers, tapers, deer, antelopes, peccaries, and warrees (animals of the hog kind), caviars, agoutis, armadillos, opossums, and raccoons. Monkeys are numerous, and some of them are eaten. Manatis and alligators are met with in the lagoons along the coast. Among the numerous birds are turkeys, spoon-bills, toucans, Muscovy ducks, macaws, and many kinds of parrots, pelicans, and humming-birds. Fishes are plentiful and of many varieties, some of which are very large, and turtles furnish a very common and nutritious edible to all classes. Lobsters and shell-fish are abundant and excellent. Domestic animals, as cattle, sheep, and goats, are not kept in sufficient numbers for consumption. The cattle are principally used in drawing timber and logwood from the forests. But few horses are bred in the settlement.—Honduras is governed by a superintendent nominated by the sovereign, "to watch over the interests of the settlers, to secure them from any improper intrusion of foreigners, and to regulate all affairs which more particularly affect the dignity of the crown." There is also a mixed legislative and executive power, termed the magistrates of Honduras, consisting of 7 members, elected annually. All their enactments, to become law, must first receive the assent of the chief executive. They are the councillors of her majesty's superintendent, the guardians of the public peace, judges of all the lower courts; they form the court of ordinary; they are the guardians of orphans, and can de-

egate their power in the management of the property of such persons to another, &c. They settle all salvage causes, manage the finances, and control the treasurer. No money can be paid without the sanction of 4 of them, who sign all orders for issue. Their services are gratuitous. Trial by jury is established, and from the decisions of the court appeal lies directly to the sovereign in council.—The military protection of the colony consists of one company of artillery and a regiment of the line. There is also a local maritime force. The superintendent is commander-in-chief of this militia. All duties and taxes are levied under the authority of acts passed by the magistrates and sanctioned by the superintendent. The ordinary expenses of the government amount to about £20,000 per annum. In church affairs, Balize is an appendage to the diocese of Jamaica, and the public religion that of the church of England. The public support a common school at Balize, and there are several good private schools, beside a number of Sunday schools, the latter of which are conducted chiefly by the dissenters.

BALKAN MOUNTAINS, an extensive range bounding the great plains of Bulgaria south of the lower Danube. The true Balkan, or ancient Hæmus, commences on the Black sea at Cape Eminèh, or Hæmus, lat. $40^{\circ} 48'$, and after making a curve to the north, runs S. W. to the sources of the Maritza, the ancient Hebrus, comprising about 4 degrees of longitude, dividing Bulgaria from Rœmelia or Turkey proper. Here it is intersected at an acute angle by a range running N. W. and S. E. from Romagna into Servia, and called by the ancients Rhodope and Scomrus, by moderns Dupinshadagh. Further west, on the southern frontier of Servia, it becomes the Mount Orbelus of the ancients. Between Servia and Albania it is the Mons Scardus, or Kara-dagh, and thence crosses Albania, terminating again with the sea, near the head of the gulf of Venice. The average elevation of these mountains is about 4,000 feet. The highest peak N. W. of Kolofer is 5,325 feet. The Balkan is the natural defence of Turkey against northern invaders. It has 6 passes, the principal and most passable of which is that of Shumla, by which the Russians, under Marshal Diebitch, effected a passage in 1829, notwithstanding the resistance offered to him by the fortresses of Varna and Shumla. The Balkan is united to the Carpathians and to the Alps by lateral chains. Some of the rivers which take their rise in the Balkan are of considerable importance. Those which flow from the northern water-shed are tributaries to the Danube, with the exception of a small river, the Daphne, which runs into the Black sea near Varna. The rivers Ogost, Isker, Jantra, traverse Bulgaria and fall into the Danube. On the south the Maritza and its numerous small tributaries flow through Rœmelia into the Ægean sea. From the western range the Morava or Margus and the Drin flow

north through Servia from Mount Orbelus and the mountain district of Montenegro. On the south the Nestus (Mesto), Struma, and Arius (Vardar), carry off the waters into the gulfs of Contessa and Salonica. The mountains are principally of granitic formation. Marble is abundant in the southern ranges, particularly if all the mountains of Turkey and Greece be included in the general system. Gold and silver were found by the ancients. Copper, iron, and lead mines are also in existence, but the unsettled state of the country, and the little interest taken by the Turks in such pursuits, prevent the mineral resources from being developed.

BALKASH, or **TENGHEZ**, an extensive lake of central Asia, on the borders of Chinese Toorkistan and the Russian government of Tomsk, between lat. 44° and 47° N., and long. 77° and 81° E. It has no visible outlet. Its length from N. E. to S. W. is 150 miles; greatest breadth, 75 miles. It is enclosed by mountains on the E. and W. On the S. and S. W. is the valley of the Ili, which was, about a century ago, the principal domain of the independent and powerful Zungarees. They were nearly annihilated by the Chinese, who now cultivate their valley.

BALKH, a town of Bokhara, central Asia, lat. $36^{\circ} 48'$ N., long. $67^{\circ} 18'$ E.; pop. about 2,000. Its present insignificance contrasts strongly with its ancient importance. In the overland trade between China and western Asia Balkh was a depot of the caravans. The ruins of the town, spread over 20 miles, attest its former greatness, which was impaired by the discovery of the Cape of Good Hope route to India. It was sacked by Genghis Khan, who perpetrated a general massacre of its inhabitants; and a second time the inhabitants were the victims of Tamerlane; Nadir Shah also conquered it, and it has received the last indignity from Murad Khan, a chief of the Kardoozes. It formerly belonged to the Afghan rulers, but on the disruption of their kingdom it was seized by the king of Bokhara, who derives no advantage from its possession, the revenues being appropriated by his lieutenant. The district is fertile, and once supported a large population, by whose industry it was extensively irrigated from the river Oxus. Traces of the works for this purpose still exist in the canals which are now choked up, and are only sources of disease.

BALL. Although dancing is probably as old as Adam, balls are of less ancient origin. Dancing assemblies of antiquity were more or less connected with gymnastical, theatrical, or strategical associations. The Greeks had their martial dances, which had a political meaning, inasmuch as the leading idea was to develop warlike habits, and to rear good soldiers for the state. The modern reunions which come nearest to these gatherings of the ancient Greeks, are the diplomatic balls, where cunning takes the place of steel, aspiring statesmen talk politics to intriguing ladies, and shy whispers about the

British cabinet or the new American president, mingle with the gay strains of music and the voluptuous movement of the waltz. But, on the whole, balls as they exist in modern times, are assemblies where people meet to dance, to chat, to flirt, to dress, to be stared at, and to stare. Such assemblies, serving purely for amusement, recreation, frolic, mirth, did not exist in former times. France is the mother universal of balls. The first great ball mentioned in history was given at Amiens in 1385, on occasion of the marriage of Charles VI. with Isabella of Bavaria. At first balls were monopolized by kings and nobles. In 1715, *le bal de l'opéra* was organized by the government to popularize balls, and gradually they entered into the amusements of the people at large, and spread all over the world, until at the present day there are court balls, *bals parés*, fancy dress balls, military balls, wedding balls, public balls, private balls, rural balls, *bals masqués*, carnival, new-year's balls, juvenile balls, hunt balls, firemen's balls, literary balls, charitable balls, &c., where contredances, waltzes, polkas, mazourkas, redowas, and other dances are indulged in, to the accompaniment of music, and generally under regulations and etiquette, which vary according to the usages of the country and the standing of the parties. The first *bal masqué* was given by the formidable Oatharine de' Medici, and the mixture of romantic pleasure with social treachery which such balls allow, is more congenial to Italian than to French tastes. But they suited remarkably well the peculiar character of Henry VIII., who introduced them into England, when gradually they spread among the people, who no longer, as in former times, danced in the free air, but hired splendid halls, where an admission fee was paid, and the routs of the court were imitated by the orgies of the mob. In Venice and Rome *bals masqués* remain to this time grand affairs, and it may be said, on the whole, that this sort of balls suit more particularly the genius of southern European countries, as Spain, Italy, and, to some extent also, France, from whence, toward the end of the 17th century, they were transported to the courts of Germany, where they became popular under the name of *bals costumés* and *redoutes*. In Schiller's Fiesco, the conspiracy against the doge of Genoa is planned, during the revels of a *bal masqué*. In his Wallenstein, the most ominous forebodings of Thecla find utterance during a ball. Goethe delights in bringing Faust to the open-air balls of the villagers, and especially in the Bocksberg scene, the ball of the witches produces a picturesque contrast with the sweet face of poor Margaret. Many orthodox Hebrews still give *bals masqués* on the evening of the feast of Purim, an occasion of great rejoicing to commemorate the triumph of Esther and Mordecai over Haman, the enemy and persecutor of their race. The most magnificent *bals masqués* are those which take place occasionally at the French and English courts. The lowest is the ball of the Courtelles, in Paris,

where the vilest scum indulge during the 8 days of the carnival, in bacchanalian orgies, which cannot be described. Balls have frequently been the scenes of stirring incidents, like the *bal masqué* at Stockholm, on the night of March 15, 1793, in the course of which Gustavus III. was assassinated by Count Anckarstroom. A peculiar series of balls were the *bals des victimes* held at Paris, in the winter of 1794, under the auspices of Madame Tallien and Josephine, when the relatives of the victims of the reign of terror appeared in mourning. The ball given July 2, 1810, by Prince Schwarzenberg, the Austrian ambassador at Paris, which was interrupted by a violent fire, in which several persons lost their lives, including a sister-in-law of the prince, is famous in history. As the ball was given in honor of Maria Louisa, who was present with Napoleon, superstitiously inclined people saw in the fire an indication of the wrath of Providence excited by the emperor's divorce from Josephine. The memorable ball of Brussels, on the eve of the battle of Waterloo, the trumpets of the battlefield blending almost with the music of the dancing, the iron duke quietly and smilingly leaving the ball room for the great and momentous conflict, is used with great poetical effect in Byron's "Childe Harold." The most characteristic balls in England are the hunt balls, which take place every year in connection with the hunting season, in the principal county towns. In the United States public balls are generally democratic. They are often given by fire companies and military companies to celebrate an anniversary, or to procure a fund for a charitable purpose. The inauguration of a new president is also usually the occasion for a ball at Washington, of such proportions that a monstrous temporary ball-room has to be erected for the purpose. On that occasion not only the immediate friends of the new dignitary, but the whole numberless throng of office-seekers make it a point to be present.

BALL, GAME OF, a favorite gymnastic exercise from the earliest period of history to the present time. It is mentioned in the Odyssey, where Phæacian damsels played it to the sound of music, and at the court of Alcinoüs it was associated with dancing and made a highly artistic game. It was the chief exercise of the young Spartans, and the Athenians so highly esteemed it that they erected a statue in honor of Arctonicius, on account of his skill in it. It was played at Rome by persons of all ages, and Pliny relates how the old man Spurinna ward off decrepitude by exercising himself in the game. Attached to the baths, were rooms designed specially for the purpose of ball playing. During the middle ages it was played by the students of France, Germany, and Italy, and it is still a popular game in the spring time in those countries, and also in England and America. It is especially in favor among the American Indians, who form themselves into large parties for the purpose of playing it. The only constant element in the manifold varieties of this

game is an elastic ball. This is thrown by the hand, knocked by a bat, or kicked by the foot. The foot-ball, the largest in size, is 6 inches or more in diameter, and filled with air, and is chased by two parties who try to kick it in opposite directions. Other balls are of a size to be grasped by the hand, and the game usually depends upon the skill of one party in knocking the ball with a bat, and of the other party in catching it in the hand before it comes to the ground. The ways of playing the game are numerous and constantly varying, but there are some established and permanent methods, as ricket and tennis, which will be subjects of separate articles.

BALL, in military affairs. See **BULLET**.

BALL, JOHN, an English priest of the 14th century, a disciple of Wycliffe, upon whose religious doctrines he ingrafted some political theories, resembling the "liberty, equality, and fraternity" of later ages. The consequence of his preaching was violent excitement of the people, and public riots which lasted for two years, until the preacher was seized and beheaded, A. D. 1381.

BALL, ROBERT, M. D., an Irish naturalist, born at Cove, in the county of Cork, in April, 1802, died in Dublin, April 80, 1857. He collected many specimens illustrative of the natural history of Ireland, and eventually became director of the museum of Trinity college, Dublin, while his collection, which was purchased for the museum, was placed under his own care. He was perhaps best known as secretary of the Royal zoological society of Ireland. In 1856, he produced before the zoological section of the British association, at Cheltenham, a valuable paper and diagram on the aëration of aquavivaria.

BALLA, an Irish village in the county of Mayo, frequently mentioned by ancient chronicles, but now containing only 600 inhabitants, and a round tower.

BALLADS, a peculiar species of national poetry for which Spain and England and Scotland have been particularly celebrated. The ballad appears to have been distinctly Norse, Teutonic, or Scandinavian in its origin, and never took any root in any southern nation of Europe of Latin origin, with the single exception of Spain, in which country the short popular poems framed for the purpose of being sung, with or without a light musical accompaniment, have arrived to equal excellence with those of the northern orders of England and the southern marches of Scotland, and possess nearly the same characteristics.—These characteristics are principally the dependence of the ballad on its subject matter, simple, energetic mode of expression, tone of thought, and marked rhythm, for its effect on its hearers, rather than on its instrumental accompaniment, the tune to which it is set, or the skill of the singer, which is best displayed when it gives to every word its full syllabic articulation, and the expression and force which its meaning and weight in the poem require, without any of those trills, bravuras, and embroider-

ies which belong to the Italian schools, and which charm the ear with sound, while entirely concealing from it the sense.—As regards the poetry of the ballad, its relation to poetry of a more ambitious order, is nearly that of its music to that of the canzone, or the opera. Simplicity and homely force of expression, whether the effect to be produced is the moving of the listener's heart, as Sir Philip Sidney tells us that his heart was wont to be moved "by the old song of Percy and Douglas, more than with a trumpet, and yet it is but sung by some blind crowder, with no rougher song than rude style;" or the stirring it to tears by the deep pathos of such wailing laments, as "The flowers of the forest are all weeded away," or "I would I were where Helen lies," and a hundred others; not the forcing of admiration by far-fetched sentiments, or the elaboration of words, is that which constitutes the true charm of this species of composition. The true ballad is always a brief relation of some knightly exploit, of some national event to be rejoiced at or deplored, of some tale of true love, pleasant or pathetic, or lastly, of some comical or popular rustic, or semi-rustic adventure.—Its subject is, always, the first thing to be sought, as having a natural attraction to its audience; and the story is to be told in the fewest and most striking words that can significantly express the fulness of the idea. Nothing of mere poetical adornment is allowable; if a simile be used it must be couched in a word or two, must be obvious, strikingly pertinent, and, while always rising above its subject in order to magnify what it describes, or descending to minute detail in order to intensify the description, such as suggests itself naturally, and seems rather to be a part itself than an illustration of the subject.—Alliteration is often introduced in ballad poetry with the greatest success; and, however quaint and homely the fresh wording, the more picturesque the images it can be made to call up by its artless and natural vigor, the more sonorous the flow of the rhythm and the grander the roll of the cadence, the greater will be the effect of the ballad.—By persons who possess, or affect to possess highly cultivated musical tastes, ballad poetry and ballad music are generally undervalued and despised, and naturally so; for the pleasure which they solely seek is the enchainment of the senses, and the holding of the imagination

In willing chains and sweet captivity,

by the pure effect of harmonies, melodies, and sounds; and not the affecting of the mind by its direct passions, by the force of the feelings awakened in it through the ordinary channels of wonder, pity, fear, sorrow, or admiration.—In old times, probably from the earliest of recorded or unrecorded history, the Scandinavian and Teutonic scalds and bards, as the Welsh harpers, were wont to sing the exploits of their heroes and chiefs, and the loves of their rude heroines, and the myths of their demigods about their camp-fires or during the hours of

banquet and wassail. During the heroic age as it is termed, of Greece, there are many traces of something nearly akin to ballad minstrelsy, so much so that some critics have maintained that the Homeric poems are no more than a collection of ballads—an opinion which certainly cannot be sustained to its full extent, how true soever it may be, that the matter which furnished the groundwork of those wonderful poems may have been contained in a series of unconnected ballads, which may have given the first idea to some master mind of “the fate of Troy divine,” as we now have it in the same manner, as beyond a question it was the minstrelsy of the Scottish border that swelled the first germs of Sir Walter Scott’s characteristic Scottish poems. They are not, indeed, ballads, but had there never been border ballads, neither would there have been a “Lady of the Lake,” nor a “Lay of the Last Minstrel.” In fact, as it has been pointed out by Mr. Macaulay, in his preface to the “Lays of Rome,” there are some characteristics of the *Iliad* which exactly coincide with those of the English ballads, one of which is the invariable recurrence of the same epithets applied to the same persons, and another, the delivery of all messages, by the messengers, word by word as they are told to the bearers of them. Thus, in the *Iliad*, Achilles is always “the swift of foot,” Ulysses, “the many wiled,” the Trojans, “the well greaved,” the Greeks, “the brazen kirtled,” while “in our own national songs, Douglas is almost always the doughty Douglas, England is merry England, all the gold is red, and all the ladies are gay.”—All the Latin literature which has descended to us, even to the rhythm and measures, consists of mere imitations of the Greek; but Fabius Pictor and Cato the censor, the latter of whom flourished in the time of the 2d Punic war, have left to us the knowledge that there existed in their times, an earlier and purely Latin literature, consisting of ballads concerning such mythical topics as the twin founders of Rome; of whom Fabius Pictor says: “Even in the fleet of Faustus, the children of Rhea and Mars were in part and in spirit, not like unto swine-herds or cowherds, but such that men might well guess them to be of the blood of kings and gods.” Even in the age of Cicero, this early literature had already perished. Not so the ballad literature of the Greeks, or, to speak more correctly, if with them the early literature passed away, the taste for it revived; and, in the accentual and not quantitative verses of the *στίχοι πολεμικοί* of the Byzantine empire, some of them in the identical measure of the well-known English ballad “A captain bold of Halifax, who lived in country quarters,” we have, probably, an exact repetition in form and character, of the early songs which related the exploits of “Agamemnon king of men,” and the “husband of Helen with the beautiful hair.” In later days, whether it be from the old national taste yet surviving, or from a newly infused love for the ballad, brought from the north-east

by the Slavonic tribes, which overran all upper Greece, in the latter ages of the Roman empire, we find the ballad literature still prevailing in Albania and Roomelia; and the Palikars of Suhi and Chimari sang, in the hearing of Lord Byron, regular ballads, of some of which he has left translations, full of spirit and of the characteristic tone of that popular and primary form of literature.—It is remarkable how near the finest ballads of England, Spain, and Germany, came to perishing, and sinking into total and irrecoverable obscurity, during the age of false taste which could endure nothing but conceits, artifices, and meretricious frippery, and which prevailed in every part of Europe, during the reigns of Louis XIV. and Louis XV. of France, and from the close of the Elizabethan to the commencement of the Georgian era in England.—“There is no doubt,” says Macaulay, “that oblivion covers many English songs, equal to any that were published by Bishop Percy, and many Spanish songs as good as the best of those which have been so happily translated by Mr. Lockhart. Eighty years ago England possessed only one tattered copy of Childe Watars and Sir Canline, and Spain only one tattered copy of the noble poem of the *Cid*. The snuff of a candle or a mischievous dog, might in a moment have deprived the world forever of any of those fine poems. Sir Walter Scott, who united to the fire of a great poet the minute curiosity and patient investigation of a great antiquary, was but just in time to save the precious relics of the minstrelsy of the Border. In Germany, the lay of the Nibelungs had been long utterly forgotten, when, in the 18th century, it was for the first time printed from a manuscript in the old library of a noble family. In truth, the only people, who, through their whole passage from simplicity to the highest civilization, never for a moment ceased to love and admire their old ballads, were the Greeks.” Happily a purer taste has long revived both in England and our own country, and few poetical works receive more attention among genuine lovers of poetry than Percy’s, Ellis’s, Ritson’s, Motherwell’s, Hall’s, or Childs’s collections of metrical romances and ballads, dear to all those who love to drink at the “well of English undefiled.” The ancient ballad of Spain has found a worthy translator in Mr. Lockhart, who has wonderfully combined the spirit of the age with the exact letter of the original language; while in Scott, Dr. Leyden, the authoress of “Auld Robin Gray,” Motherwell, Macaulay, and Aytoun, the English ballad has found imitators of great and yet original truthfulness. Their error has for the most part been in the adoption of too ornate a style, and too great a leaning to diffuse description, which is the drawback to Sir Walter Scott’s and Dr. Leyden’s longer pieces; although some of the fragments of the latter might be taken for genuine ancient relics, especially the magnificent stanzas in the “Antiquary;” and which, had they been put forward in black letter, as a real contemporaneous relation of the

battle they describe, would have puzzled half the critics and antiquaries of the day in which they actually appeared as a *jeu d'esprit*, or of any other jury more critically acuminated. In the United States, original ballad poetry has taken but little root in the grave and stern soil of eastern Puritanism, or in the lighter and more excitable temper of the southern mind. Mr. Dnyckinok, however, discusses the ballads of the revolution in his excellent "Cyclopædia of American Literature;" and Mr. Frank Moore has collected into one convenient volume all that is extant of them. In modern ballad composition we have been hardly so fortunate as in other branches; or, perhaps, our more able poets have hardly turned their attention to the ballad in its pure severity; those very beautiful poems of Mr. Longfellow, the Belfry of Bruges, Hans Sachs, the cobbler poet, and some others, Philip Pendleton Cooke's Froisart ballads, and Whittier's various productions in ballad form, being, in truth, poems of a far higher soar and deeper sentiment than ballads, which deal with sights and sensations, not with musings and recondite speculations of the fancy or imagination.

BALLANCHE, LOUIS SIMON, a French writer and philosopher, born in Lyons in 1776, died in Paris, June 12, 1847. He first followed the trade of his father, who was a bookseller and a printer; but meanwhile he secretly addicted himself to literary pursuits. As early as 1801, he published a book called *Du sentiment considéré dans ses rapports avec la littérature et les arts*, which gained for him the distinction of being elected a member of the provincial academy of Lyons. In 1814, appeared *Antigone*, a historical novel or poem in prose, narrating the misfortunes of the family of Oedipus, in a style of classic beauty. Then came his *Essai sur les institutions sociales dans leurs rapports avec les idées nouvelles*, in which he tried to reconcile national tradition with the progressive law of modern society. These performances, which bore the marks of a very elevated mind, passed nearly unnoticed by the public, though highly appreciated by a small number of readers. In 1820, *L'homme sans nom*, a novel, in which fatality, or rather the severe law of Providence is depicted in fearful colors, made more impression, as it appeared to be, under a scarcely disguised form, a virulent denunciation of some old revolutionary leaders; *L'homme sans nom* was indeed one of the judges who had condemned Louis XVI. After this publication, Ballanche, who had previously removed to Paris, returned to purely speculative studies. In spite of their abstruseness, his subsequent works were eagerly sought for; and their philosophical meaning began to be more generally understood, while their purity of style won universal admiration. In *Orphée*, which is much like *Antigone* in point of literary form, he symbolically expounded the way in which every great social evolution must be accomplished. But we must look to

the *Prolégomènes*, which serve as an introduction to *Orphée*, and especially to his great work called *Palingénésie sociale*, for the complete exposition of his theory, which seems inspired by a sort of prophetic and mystical spirit. This theory is summed up, though not made more intelligible, in *La Vision d'Hébal, chef d'un clan Ecossais*, which was Ballanche's last published book. His name is happily associated with those of Chateaubriand and Mme. Récamier, and if it is not one of the most popular, it is certainly one of the purest and most highly honored in the literary world.

BALLANTYNE, JAMES, printer of Scott's poetry and the Waverley novels, born in 1772, died 1833. While yet a child, he became acquainted with Walter Scott, who was his fellow-pupil for a short time at Kelso grammar school. In 1795, Mr. Ballantyne commenced practice, as a solicitor, in his native town, Kelso. In 1796, he started a weekly journal called the "Kelso Mail," and, having accidentally met Scott in the mail coach as he was going to Glasgow to purchase type, then formed that intimacy which continued for 35 years. In 1799, having displayed great taste in printing a few copies of Scott's ballads from the German, for private distribution, he was induced to remove to Edinburgh, there to carry on the printing business. The first volumes he issued in Edinburgh, from what he called the border press, were the first and second of Scott's "Minstrelsy of the Scottish Border," brought out in a manner greatly superior to any Scotch printing of that time. The third volume followed in 1803, with equal claim for admiration. From that time, he printed all of Scott's works, and was indebted to his recommendation for large employment by publishers and authors. From 1805, however (when the "Lay of the Last Minstrel" was published), to his failure in 1826, Scott was a secret partner with Ballantyne, not only in the printing business, but in the proprietorship of the "Edinburgh Weekly Journal," which Ballantyne conducted with spirit and success. It is worthy of note, that though Ballantyne, unequalled as critic and editor, was a careless man of business, his printing office always yielded large profits. For many years he printed "Blackwood's Magazine;" and in the year 1822, the volumes, all from Scott's pen, which were issued from Ballantyne's press, were 145,000. Unfortunately, Scott also became principal in a publishing house of which John Ballantyne was the ostensible head. After struggling for some years, with heavy losses, this concern was broken up. Scott's misfortunes, the result of his purchasing land at enormous rates, and drawing bills, on which heavy discounts were paid, also ruined James Ballantyne. In the life of Scott, by Lockhart, Ballantyne was strongly blamed and reproached for having led Scott into the pecuniary difficulties which darkened his latter years. After some cross-shooting of pamphlets, in denial and proof of these charges, the public generally arrived at the conclusion that

Scott's constant demands for money, coupled with the rashness of Constable, the publisher, who freely drew and accepted bills (to meet their mutual exigencies), caused the catastrophe. It is worth notice, also, that Mr. Lockhart, at the worst, attributed only carelessness, not want of probity, to Ballantyne. From the time of his printing Scott's first poem (the Lay), James Ballantyne was almost the only person to whose criticism and suggestions he paid any attention. A rapid and careless writer, it was fortunate that he had a confidential friend capable of being critical on every sentence, and willing to undertake such a duty, at once troublesome and thankless. From the first, James Ballantyne was wholly in Scott's confidence as to the Waverley novels, and, indeed, was the sole medium through whom the sale and publication were negotiated. His social merits were great. Wilson described him as "the best declaimer extant," and Lockhart said he was one of the best readers he ever heard. He was considered, for 25 years, to be the best theatrical orator in Scotland. His wife, sister of Mr. George Hogarth, author of the "History of Music," was aunt of Mrs. Charles Dickens. —JOHN, brother of the above, born 1774, died 1821. After having filled the office of clerk in a London bank for some time, he returned to Kelso, his native place, where he kept a clothier's shop. He was unfortunate in business, paying all his debts, which left him penniless. Early in 1806, he went to Edinburgh, as clerk to his brother James. In 1808, he became nominal head of the publishing house of John Ballantyne and Company, of which Walter Scott was principal. At the end of 5 years this concern was dissolved, and John Ballantyne established the business of literary auctioneer, in Edinburgh, which he carried on with great success, until his death. His liveliness, humor, eccentricity, and convivial habits, so greatly endeared him to Scott, that, as he gazed on the grave in which his remains were deposited, he said, "I feel as if there would be less sunshine for me from this day forth." He was repeatedly mentioned by Wilson, in "Blackwood's Magazine," for his social qualities. As a mimic he had no superior, and Lockhart says that some of the elder Mathews's most successful stories were derived from John Ballantyne, who told them with greater raciness. "The Old Scotch Lady," says he, "was but an imperfect copy of the original, which the great imitator first heard in my presence from John Ballantyne's lips." He wrote a novel, "The Widow's Lodgings," which utterly failed, and, for a short time, conducted a weekly periodical called "The Sale-Room," to which Scott contributed some minor poems, including the light and humorous little piece entitled, "The Sultan of Serendib; or, the Search after Happiness." —ALEXANDER, the youngest of this fraternity, also lived in Edinburgh, but was not connected with Scott in business in any way. He was an amiable man, and so fine a musician that, in the "Noctes Am-

broisians," the redoubtable Christopher North said, "He knows that I love music, and that I could sit from sunset to sunrise beneath the power of his matchless violin." Scott mentions in his diary (May, 1826), that he had then borrowed £500 from Mr. Alexander Ballantyne, and solemnly requested that if God should call him before the ensuing November, when the note would be due, his son Walter, "in reverence to my memory," would repay the loan.

BALLARD, a western county of Kentucky, separated from Missouri by the Mississippi river, and from Illinois by the Ohio. It has a moderately uneven surface, with plenty of good timber land. The soil of the southern portions of the county is quite fertile, but in the north it is poor. The staples are tobacco, hemp, and grain. In 1850, the productions amounted to 272,550 bushels of Indian corn, 9,141 of wheat, 25,280 of oats, 152,700 lbs. of tobacco, 3,680 of wool, and 7,351 of flax. There were 10 churches, and 480 pupils attending public schools. The county was formed out of parts of M'Cracken and Hickman counties in 1842, and was named in honor of Captain Bland Ballard, an officer of the war of 1812. Capital, Blandville. Pop. in 1850, 5,496, of whom 842 were slaves.

BALLARD, GEORGE, a native of Camden, in Gloucestershire, who, while an apprentice, acquired the Saxon language. His industry attracted the attention of Lord Chadworth, who settled upon him an annuity sufficient for his expenses. He went to Oxford, where he was made one of the clerks of Magdalen college, and afterward a beadle of the university. His naturally weak constitution was impaired by the severity of his labors, and he died in 1753. The only work published by him was "Memoirs of British Ladies celebrated for their Writings."

BALLAS, a town in upper Egypt, on the Nile, in lat. 26° N., long. 32° 43' E., where the celebrated earthen water-jars, Ballasee, are made. These jars, which are used as water vessels throughout Egypt, are frequently floated down the Nile in large rafts to market.

BALLAST, a shipping term for the sand, stone, brick, coal, iron, or any other heavy substance, which is put in the bottom of the ship to sink her deeper in the water, and of rendering her able to carry sail without fear of being upset. If too much ballast is put in the ship it is said to be too stiff, sails slowly, rolls heavily in a storm, and runs the danger of being dismasted. If she does not carry enough, she is said to be too crank. This condition makes her unsteady and top-heavy, and likewise endangers her mast, which being frequently thrown out of the perpendicular, strains upon the shrouds. A ship is said to be in ballast when she carries no other cargo except ballast, passengers, and the baggage and provisions of the captain, crew, and passengers. Shipmasters are not allowed to unload their ballast at roadsteads and havens for fear of doing injury to the port; regulations exist in every port for the proper unloading of

ballast.—Balloons take up with them a certain amount of ballast, which consists of sand or some substance which, thrown from on high, will not hurt the heads of mortals down below. When the balloon is descending it is necessary to let the gas escape, and that often makes it not buoyant enough, so that there is danger of coming down to earth too rapidly. The aeronaut, on perceiving that the balloon is descending too rapidly, or wishing to select a suitable place for descent, throws out his ballast, which lightens the balloon, and enables him to descend more slowly, or to move on to some other spot.

BALLESTEROS, FRANCISCO, a Spanish general, born at Saragossa in 1770, died at Paris, June 22, 1832. He first served in Catalonia against the French during the campaigns of 1792 and 1795, and was appointed to a captaincy. Discharged in 1804 on account of embezzlement, he was nevertheless intrusted by the all-powerful Godoy, prince of the peace, with one of the most productive offices in the custom-house, the direction of the *resguardo* at Oviedo. When the French army invaded Spain, in 1808, Ballesteros was promoted to a colonelcy by the provincial junta of Asturia, and joined the Castilian army under Castaños and Black. The regency of Cadiz promoted him to the rank of lieutenant-general, and put him in command of the army of Andalusia. He had then to fight against some of the most skilful chiefs of the French army, and succeeded in avoiding their pursuit by peculiar tactics. When Wellington was intrusted, in 1812, with the general command of all the armies in the Peninsula, Ballesteros showed such violent opposition that he was arrested as guilty of treason and sent as a prisoner to Ceuta. A few months later he was restored to liberty, but not allowed to reënter the military service. On the return of Ferdinand VII. to Spain, Ballesteros made such a show of devotion to monarchical principles that he was appointed secretary of war, but was soon dismissed and sent to Valladolid, where he was placed under the strictest surveillance. When the struggle between the royalists and the constitutionalists commenced, he managed so artfully that each party thought Ballesteros was acting in concert with them. Commissioned by the chiefs of the latter to obtain the assent of the king to the constitution, he succeeded beyond their anticipations, and became a member of the council of state, while he was at the same time admitted in the *comuneros* association. This double-dealing seemed to be perfectly successful, for in 1823, on the entering of the French in Spain, he was appointed to the command of the army; but instead of showing fight, he concluded a capitulation with the duke of Angoulême, which became the occasion of accusations of such a character that Ballesteros thought it not prudent to stay any longer in his own country, and took refuge in France, where he died a forgotten exile.—**LUIS LOPEZ,** a Spanish financier, born in Galicia, about the year 1778. He entered

the cabinet as minister of finance, in 1825, and at once launched his country into those ruinous loans, under the burden of which Spain is sinking. He acted in concert with the celebrated Aguado, marquis of Las Marismas, and succeeded in acquiring wealth amidst public embarrassment. He was an absolutist in politics, but distinguished by a certain mildness of temper, never being in favor of rash measures. On the accession of Queen Christina to power as regent in 1833, he was dismissed from the cabinet. He has been lately appointed a member of a legislative financial committee.

BALLET, a dramatic representation composed of dancing and pantomime with music. The word itself is French, and derived from the Italian *ballare*, the root of which is evidently the Greek *βαλλειν*, to dance. The ballet may be said to be as old as the world, dancing among the ancients having been used in religious ceremonies. The most sacred mysteries of heathenism were thus accompanied; and many passages in the Greek writers show that the ballet of action was in great credit among them. Aristotle says that there are dancers, who, by rhythm applied to gesture, express manners, passions, and actions. Some of them, according to Athenæus, brought their dance to such perfection in the art of imitating the passions, that the most eminent sculptors thought their time not ill employed in studying and designing the attitudes of the public dancers. The Romans, of course, copied from the Greeks, and reached also, under the reign of Augustus, a rare degree of perfection. Three dancers above all, Bathyllus, Pylades, and Hyllas, accomplished wonders by their varied performances, in which artistic skill and truthfulness of pantomime were so blended as to produce most perfect illusion. Pylades personified tragic subjects, while Bathyllus excelled in the representation of the comic. Each had his school of pupils and his host of partisans, whose eager rivalry led to serious disturbances. These entertainments continued popular down to the fall of the empire; but it was only in the later period that women appeared on the stage; and among the most favorite performers at Constantinople, the chronicles mention Theodora, who became the wife of the emperor Justinian. The middle ages present no records of the ballet; but in 1489, on the occasion of the marriage of Galeas Visconti, duke of Milan, with Isabella of Aragon, a spectacle of the kind was among the entertainments given by a gentleman of Tortona; and it excited such admiration, and such reports of it were circulated through Europe, that it was presently introduced in several countries. France was among the foremost in encouraging this entertainment; in 1581, Catharine de' Medici had a great ballet performed, "Circe and her Nymphs," the expenses of which amounted to 8,600,000 livres. Henry VI. was very fond of ballets, and Louis XIV., in his early days, had such a taste for dancing, that he appeared in several of these entertain-

ments before his court. Ballets and dancing had become everywhere fashionable amusements; but it may be said that the reign of the ballet all over Europe was inaugurated in the 18th century, by Noverre, whom Garrick called the Shakespeare of the dance. Noverre elevated the character of the ballet, in improving it as a whole and in its details. He propagated his principles through the principal European cities, London, Berlin, Stuttgart, Milan, Naples, Lisbon, where he was either the founder or the reformer of the ballet; finally, he returned to France, where his influence had been already felt, and entered the service of the unhappy Marie Antoinette, as chief ballet master of the royal academy of music. "A ballet," this oracle says, "perfect in all its parts, is a picture drawn from life of the manners, dresses, ceremonies, and customs of all nations; it must be therefore a complete pantomime, and through the eyes speak to the very soul of the spectator, and being a regular representation, ought, as far as possible, to be under the general rules of the drama. If it does not point out, with perspicuity and without the aid of a programme, the passions and incident it is intended to describe, it is a divertissement, a succession of dances and nothing better." Appropriate music is also a constituent part of a good ballet, supplying the language which action alone cannot speak; it is grave or lively, energetic or tender, according to the passion or sentiment to be portrayed. The rules established by Noverre were adhered to by his successors and disciples, some of whom are scarcely less illustrious than the master himself. The Vestris family, above all, shone on all the European stages during the latter part of the 18th century, and the 1st years of the 19th. Some women also were great favorites, but in a less extended sphere, such as Guimard, and Bigottini, in Paris. It was not till our day that dancers of the fairer sex were destined to acquire world-wide reputation, such as the fairy-like Taglioni, whose dance was indeed the poetry of motion, and the bewitching Fanny Elssler, who created a perfect *furor* in America as well as in Europe. Here the ballet is but an entertaining diversion; in Europe it continues to be quite a passion among certain classes of theatre-goers. The appearance of a new dancer is an event, in which the fashionable public take an interest; hosts of partisans are formed on both sides; and frequently a rivalry between two favorite female artists becomes the cause of an animated contest, which happily is conducted in general with applause, flowers, and other innocent missiles. Men who formerly were at least on an equal footing with the dancers of the other sex, now attract very little attention; sometimes, however, an eccentric performer renders himself remarkable. The invention of a ballet is an important thing; formerly it exclusively belonged to ballet-masters, who, so to say, were their own poets; but now it frequently happens that others try their ability in that sphere; thus

Adolphe Nourrit, the eminent French tenor, suggested the plot of the *Sylphide*, the dances of which were arranged by Taglioni for his daughter; and latterly Théophile Gautier has appeared as the author of the fairy legend of *Giselle*. The music of a ballet is generally the work of an experienced composer, who is allowed to borrow airs from operas or to write original music, according to his taste or the incidents of the piece. Adolphe Adam, who died a year or two since, was equally happy in his selections of compositions. Beside the *ballet d'action* or ballet pantomime, of which we have just spoken, and which is the only genuine ballet, there are also *divertissements*, consisting of little else than steps, leaps, *pirouettes*, and *entrechats*. These are sometimes introduced in the course of an opera, as in *Robert le Diable*, *Guillaume Tell*, or *La Favorite*. In the two last centuries, they were so completely mixed up with the performance, that such plays were called opera ballets. There were also comedy ballets, but both have gone out of vogue.

BALLHORN, GEORG FRIEDRICH, a German physician, born 1777 at Hanover, died 1805, the first to abandon the ancient practice of inoculation with the small-pox, and introduce the practice of vaccination. He translated Jenner's writings about the cowpox (1799), and composed with Stromeyer *Traité de l'inoculation vacciné* (1801).

BALLINAHINCH, a barony, parish, lake, demesne, river, seat, and ruined castle, in the province of Connaught, district of Connemara. Population 82,465. The barony comprises the mountains of Binabola, or Twelve Pins, and the seaport of Clifden.—Also a small town of Ireland, 10 miles E. of Dromore, in the province of Ulster, co. of Down, where a battle was fought in June, 1698, between the Irish insurgents and the royal troops. Population, 911.

BALLINAMUCK, a village of Leinster, Ireland, 11 miles from Longford, memorable for the surrender of the French troops under Gen. Humbert, to the English under Lake, Sept. 8, 1798.

BALLINASLOE, a town of Ireland, in the province of Connaught, 91 miles W. S. W. of Dublin. It is divided by the river Suck into two sections, the larger of which lies in Galway county and the other in Roscommon. A series of bridges and causeways carried from island to island across the river, connects the two portions. Ballinasloe has long been celebrated for its great annual cattle-fair, at which it is computed 90,000 sheep and 12,000 black cattle are on an average exposed for sale. It is also an important thoroughfare, and has a large traffic in wool and grain. Its most noticeable public building is a singularly beautiful church, with a lofty octangular spire, springing from crolls, and forming a striking feature in the landscape for miles around. Pop. 6,240.

BALLINCOLLIG, a town on the Lee, county of Cork, Munster, Ireland, containing a half ruined castle, built in the time of Henry

III. artillery barracks, and powder mills; pop. 1,246.

BALLINGALL, GEORGE, a Scotch physician, who died Dec. 4, 1855, officiated since 1828 as professor of military surgery in the university of Edinburgh, after having served as a surgeon in the East India army and on the continent. He was a corresponding member of the French medical academy, and connected with various other learned bodies in Scotland and Ireland. His lectures on military surgery were numerous, and attended. He wrote a text-book for his class, entitled "Outlines of Military Surgery," and left various other writings, prominent among which are his "Observations on the Diseases of the European Troops in India," and "On the Site and Construction of Military Hospitals." In reward for his long and faithful services he was knighted in 1880, upon the accession of King William IV.

BALLISTA, a military engine of the Romans, used in the siege and defence of fortified places. Neither from the description of authors, nor from any carved or painted representation extant—although Trajan's column presents several specimens of these machines—can any distinct understanding be had of the principle or process of working these primitive substitutes for artillery. They were all included under one general term of *tormentum*; which, as is shown by a root *torquere*, to twist, would seem to imply that the propulsion was given by means of the torsion of ropes or fibres; yet the method is not discoverable; nor is the use of them decisive, since *torquere* came in time to signify simply to hurl or launch any missile, by any means, even by the unassisted force of the human arm.—The difficulty is increased by the fact that the names of the various engines are often confounded, and used indiscriminately by writers subsequent to the times of Julius Cæsar. Originally, however, the ballista was an engine for hurling stones with a parabolic ascent, in order to destroy the battlements of walls and the roofs of buildings in their fall; as the catapult was intended for shooting darts, which often assumed the magnitude of beams, shod with iron, and sometimes enveloped in tow, steeped in oil and naphtha, and set on fire.—The ordinary ballista threw stones of three various weights, according to which standard the power of the engines was rated, as our cannon are by their calibre; these were, half a hundredweight, a hundredweight, and three hundredweight—which last appears to have been the maximum. Josephus mentions ballistæ, the destructive power of which he records as very formidable, capable of throwing their missiles with execution, to the distance of a quarter of a mile. Vitruvius also mentions smaller ballistæ, which threw stones not exceeding 2 pounds weight, and which seem to have been used in field artillery, and to have been plied from the rear, over the heads of the front ranks, into the enemy's lines.—In the middle ages, ballista as the term applied to the cross-bow, and,

in the reign of Henry III. of England, there was an officer named ballistarius, the keeper of the cross-bows, whose pay was a shilling a day—a very large sum in those days—beside another, the *attiliator ballistarum*, whose duty it was to provide the harness and accoutrements of the cross-bowmen. In the classics, however, the catapulta, not the ballista, is the large wall-cross-bow, used in the place of cannon. In Grose's "Military Antiquities" there is an engraving, from an old contemporaneous carving, of a trebuchet, or machine for casting stones, of the middle ages, with 2 figures apparently feeding and working it, clad in chain hauberks, hoods, and hose of the earliest period; but no idea whatever can be formed of the operation of its mechanism. It is remarkable that a similar confusion to that noted above in relation to the ballista, existed in reference to the trebuchet, which is sometimes described as a gigantic cross-bow, sometimes as an engine, consisting of complicated springs, for the casting of stones. The force and accuracy of aim of these engines were far greater than is usually supposed; as is shown by the following passage from Froissart, chap. lix., in which he has previously described the siege of Mortagne, and the manner in which the defenders were annoyed by an engine of the assailants: "There was, at this time, a very able engineer at Mortagne, who, having considered the machine of the Valentinois, and how much it annoyed the town, for it was perpetually in action, made another in the castle, which was not very large, but well-made and tempered, and so well formed that it was used only 8 times; the first stone fell within 12 paces of the engine of the Valentinois; the second was nearer to the box; the third was so well aimed, that it struck the machine on the shaft and split it in two."—After the use of gunpowder, these engines, necessarily, fell into disuse.

BALLISTIC PENDULUM, a contrivance for measuring the velocity of projectiles. It is a pendulum with a large wooden block at the lower end. A ball being fired horizontally into this block swings it through an arc, the length of which depends upon the relative weights of the two masses, and upon the velocity of the ball, so that from the length of the arc the velocity may be calculated.

BALLIUM, the main keep, or central part of the old Norman castles of the feudal days; sometimes called the donjon, which, itself a corruption of *dominionum*, in low Latin, has since been corrupted into *dungeon*, and used to signify a subterranean prison. It was usually of a square form, and often stood on an elevated mound, having circular, octagonal, or sometimes diamond-shaped turrets at the angles, forming flanks, which commanded the flat curtains between them by their cross-fire. The walls of the two lower stories were of such immense thickness, that the whole structure was little less than a mass of solid masonry, and the habitable apartments were only reached, either by

a narrow winding staircase of stone, hollowed out of the massive stone-work, if the portal were on the lower floor, or by a flight of external steps, exposed to a cross-fire from the flanks, and to floods of boiling oil, pitch, or molten lead which could be poured down on the heads of the assailants from the machicolated bartizans and battlements above. For many of the lower stages, these massive works showed no apertures to the outer air beyond loops, shot-holes, and crenelles for arrows, having their windows only placed so high as to be above the reach of scaling ladders; and, before the introduction of artillery, they were nearly impregnable. There are some fine specimens of this feature of Norman castle architecture still well preserved in England, such as the keep of Richmond castle, in Yorkshire, Caesar's tower at Kenilworth, and several others.

BALLON, a town of France, department of Sarthe, near the Orne, 12 miles N. N. E. of Le Mans. Anciently this was one of the principal fortresses of Maine, and was captured by the English in 1417. It now contains 2,129 inhabitants, who carry on the manufacture of linen.

BALLON, LOUISE BLANCHE THÉRÈSE PERRU-CARD DE, a lady celebrated in the annals of the church of Rome, as foundress of the sisterhood of the reformed Bernardines, born in 1591 at the chateau of Vandrie, in Savoy, died Dec. 14, 1668, at Seyssel, a French town, near Geneva. Under the direction of St. François de Sales, she introduced many reforms, first in the monastery at Annecy, which in 1618 had been founded by this saint in conjunction with Madame de Chantal, and afterward in various other monasteries in France, Switzerland, and Germany. Her innovations received the sanction of the Holy See in 1631, and her religious writings were published at Paris in 1700, under the auspices of Father Grossi of the *oratoire*.

BALLOON (Fr. *ballon*), the name given to the machines first constructed by the French to be filled with hydrogen gas, for rising in the air. The lightness of hydrogen was discovered by Cavendish, in 1766. He found it from 7 to 11 times lighter than common air; but when pure it is 16 times lighter than air. Dr. Black and Cavallo both attempted to cause a thin bag filled with it to ascend, their only success was in the latter making a soap bubble rise. When thin bags are made of very great capacity, the weight of their materials bears a much less ratio to that of the air they displace than when the bags are small, consequently the difference of weight of very large bags distended with some light gas, and that of the same bulk of air, must be so great that these bags will mount upward, as any light substance ascends in water, the heavier fluid sinking beneath and pushing it up. The history of balloons has already been given in the article **ÆROSTATION**. As now prepared they consist of a bag of globular form, made of thin silk varnished with some elastic gum; a network of strong cords surrounds this, to which is suspended the car

for passengers. The parachute sometimes carried up with the car is an umbrella-like apparatus, in which a person may be seated or suspended. By detaching it from the balloon, one may descend in it to the ground, the expansion of the wide cover holding the air, and causing it to sink with moderate velocity. In the top of the globe is a valve, controlled by a string reaching to the car, and intended to be opened to admit the escape of the gas, when in the higher regions of the atmosphere this expands as the outside pressure is reduced. But for this precaution the balloon, if filled at the surface, would surely burst by reason of the tendency of gaseous bodies to expand, as the pressure upon them diminishes, as has been explained in the article **ATMOSPHERE**. In order to economize the gas, it is usual to only half fill the balloon on starting, it then becomes fully distended when the pressure without, instead of being 14.6 pounds on the square inch is reduced to 7.3 pounds, which takes place at the height of about $8\frac{1}{2}$ miles. But even if the elasticity of the gas could be restrained, the balloon would not have the same buoyancy as if distended to its full dimensions with a less amount of the gas, but more rarefied. As hydrogen gas is expensive to prepare in large quantities, the common carburetted hydrogen used for illumination is substituted for it. A cubic foot of this weighs about $\frac{1}{32}$ of a pound; a balloon of 60 feet diameter containing 118,100 cubic feet, holds 3,534 pounds of this gas, or if only half filled, 1,767 pounds. Common air weighing .07529 pound to the cubic foot, the balloon, half filled, would hold of it 4,257 pounds. The difference, 2,490 pounds, is the weight required to give the balloon the same gravity as the air it displaces. With any less weight it would ascend; and the more this is reduced the higher would the balloon mount, to find the rarity of the air corresponding to its own gravity. This point is the limit, beyond which balloons can never reach. If, instead of coal gas, hydrogen gas of the ordinary quality made for this purpose, weighing $\frac{1}{2}$ as much as air, be used, the balloon would lift about 3,500 pounds.

BALLOT (Gr. *βαλλω*, to throw). The name was originally taken from the use of balls cast into a box as a mode of deciding any thing, now more usually applied to suffrage by writing in distinction from voting *visæ voce*, or by holding up the hand, or other visible demonstration.—In Athens it was the common mode of voting in the assemblies of the people, and in the courts, at first by casting pebbles (*ψηφοί*) into boxes (*καδοί*); hence the term *ψηφισμα*, law. Afterward, bc. 18 (*κυμαί*) were used; hence the proverbial expression, *κυμαιστρῶνες* (bean-eaters), to designate corrupt judges.—If the question was upon the adoption of a law, the mode of decision was by the deposit of white or black stones, or beans, in boxes, the white being an affirmative, the black, rejection. In the courts the same course was pursued. If it was a criminal proceeding, the white stone or bean was for

acquittal, the black for condemnation; and in civil cases one designated the prosecutor, the other the defendant.—It does not appear that this mode of voting was used for the sake of secrecy. The assemblies and courts were held in the daytime in public places, and the voters were separated from the popular audience only by a cordon of ropes. When, therefore, the voters went up to the boxes and deposited their ballots, it was known how they voted. Secrecy might have been designed in the court of the Areopagus, which made its decisions at night, and without the presence of an audience, but in the other courts and popular assemblies the ballot was, doubtless, a mere matter of convenience.—Ostracism, which was a vote of the people for the expulsion of a citizen for the term of 10 years, was done in a similar way, viz., by writing the name of the obnoxious party on a shell.—It appears that the assembly of the people at Athens in a legislative capacity passed or rejected a law precisely as it was proposed, without amendment.—At Rome the usage was, for a considerable period before the subversion of the republic, to vote by tablets inscribed with letters expressing assent or dissent to a proposed measure, and the result was sometimes different from what might have been expected from popular opinion as openly expressed. Cicero speaks of it as being all that remained of former liberty; that notwithstanding the laws had been prostrated, yet that sometimes they would reappear in the silent suffrages of the people (*judiciis tacitis aut occultis de honore suffragiis*), Cic. Off. lib. ii. 87. Pliny objected to the ballot (*tacitis suffragiis*), as affording a screen to corruption, b. iii., let. 20.—The common mode of voting in the United States by ballot is much superior in convenience to the English *viva voce* mode, but has not so much importance in respect to purity of elections as has by its advocates been attributed to it. Corruption will exist, whatever mode of voting may be prescribed, if there is want of integrity in the people. Perhaps the open vote is to some extent a check upon private bargaining, yet in our popular elections, whatever may be the moral disadvantage of voting by ballot, the facility and ease with which the election can be despatched by this mode must insure its perpetuity in this country.

BALLOU, HOSEA, a leading minister of the Universalist denomination in this country, born at Richmond, N. H., April 30, 1771, died in Boston, June 7, 1852. He was of French descent and belonged to a family of ministers. His father was a Baptist clergyman. Three of his brothers were also preachers, and one of them, Benjamin, was he father of 8 sons, all preachers likewise. David, another of the 8, was also the father of a preacher, while a fourth brother, not himself a preacher, furnished one from his family in the person of a grandson. Hosea Ballou was brought up in the faith of the Baptist church, which he joined in early life (1789), under the pastoralate of his father, Rev. Maturin Ballou, in

his native town. His advantages for education were small. He never attended a school until he was 20 years old, and for this opportunity he seems to have been indebted to an accidental injury which well-nigh cost him his life. His stationery in learning to write was supplied by pieces of birch bark and charcoal. He was of a naturally inquiring mind, and early began to investigate the religious sentiments he had espoused. He soon found occasion to change them for a faith then scarcely known in this country, and having, at the time of his birth, no organized congregations. Mr. Ballou at first embraced a doctrine which may more properly be designated as Restorationism than Universalism. Later in life he became Unitarian in faith, and embraced the opinion that there was no state of punishment after death. He began to preach at the age of 21, and during the early years of his ministry supplied his temporal wants by teaching a school. In 1794 he became the settled preacher of a congregation in Dana, Mass., where he labored until 1802, when he removed to Barnard, Vt. There, in 1804, he began his career as a theological writer in the publication of a volume entitled "Notes on the Parables," which was soon followed by "A Treatise on the Atonement." In 1807 he removed from Barnard to Portsmouth, N. H., where he published a work entitled "Candid Review." He removed in 1815 to Salem, Mass., where he labored only 2 years, when he removed to Boston (1817), in which place he continued to reside until his death, which occurred after a life of 81 years, 60 of which had been spent in the active service of the ministry, a service which led him, in the later years of his life, into all parts of the union. His literary labors were great; for, although he never wrote his sermons, yet he engaged as early as 1819 in the effort to build a literature for the people of his choice, and, we might almost say, of his creation. In that year the publication of the "Universalist Magazine" was commenced by Mr. Ballou, a periodical which has continued to be issued ever since, though under a modified form and name. In 1831, in connection with Rev. Hosea Ballou 2d, he commenced also the publication of the "Universalist Expositor." About the same time he published a volume of "Lecture Sermons," and a few years later (1834), "An Examination of the Doctrine of Future Retribution." His published works would make 100 12mo vols. He united more persons in marriage than any other minister in the country, and preached over 10,000 sermons. Biographies of Mr. Ballou have been published by his son, M. M. Ballou, and by the Rev. Thomas Whittemore.

BALLSTON SPA, a post village, the capital of Saratoga county, New York, situated in a valley on a branch of the Kayaderoseras creek, 7 miles S. W. of the village of Saratoga Springs; pop. in 1855, 2,285. Its mineral springs were formerly celebrated and extensively frequented by invalids, but within a few years have de-

clined in popular estimation. The Sans Souci hotel, built for the accommodation of summer visitors, is 160 feet long, and has 2 wings extending back 153 feet. There is a court-house, bank, 1 or 2 newspapers, and several churches. The Saratoga and Schenectady R. R. passes through the place.

BALLYBUNNION, a place resorted to for sea-bathing, in Munster, county of Kerry, Ireland. Some remarkable sea-caves are near by, one of them having a roof between 70 and 80 feet high.

BALLYCASTLE, a seaport town in the county of Antrim, Ireland, 5 miles S. W. of Fairhead, in a bay opposite Rathlin island. It has a population of 1,897. Although \$750,000 were expended in the construction of a pier, the harbor has since become choked up with sand.

BALLYMENA, a market town in Ireland, Ulster, county of Antrim, on the river Braid, 25 miles N. W. of Carrickfergus. It has a cotton-spinning mill, a distillery, numerous bleaching grounds, a church, chapels, large public schools, several branch banks, and a population of 5,549.

BALLYTORE, a little town in the county of Leinster, Ireland, 11 miles S. S. E. of Kinsale, where Edmund Burke received the rudiments of his education.

BALM OF GILEAD, a plant of the genus *amyris* (the *balsamodendron Gileadenae* of De Candolle). Its leaves yield, when bruised, a strong aromatic scent. From this plant is obtained the balm of Gilead of the shops, the balsam of Mecca or of Syria. This has a yellowish or greenish color, a warm and somewhat bitter aromatic taste, and a fragrant smell. It is valued as an odoriferous ointment or cosmetic by the Turks, who possess the country in which it is produced, and, from its scarcity and value, often adulterate it for the market.—The *amyris* is a low tree or shrub, growing in several parts of Abyssinia and Syria. It has spreading, crooked branches, small bright green leaves, growing in threes, small white flowers, on separate footstalks. The petals are 4 in number, and the fruit is a small egg-shaped berry, containing a smooth nut.—To obtain the juice the bark of the tree is cut with an axe at the time when its sap is in its strongest period of circulation. As the juices ooze through the wound they are received into small earthen bottles, every day's produce being poured into larger bottles and corked. When fresh, the smell of the balsam is exquisitely fragrant, but if left exposed to the atmosphere, or in a bottle uncorked, it loses this quality.—The quantity of balsam yielded by 1 tree is said never to exceed 60 drops in a day. It is, therefore, very scarce, and can with difficulty be procured in a pure and unadulterated state, even at Constantinople. Its stimulating properties upon the skin are such that the face of a person unaccustomed to use it becomes red and swollen after its application, and continues so for several days. The Turks use it as a cosmetic, and also take it in-

ternally, in minute doses, in water, to stimulate the stomach and excite the passions. It seems to have been highly esteemed by the ancient inhabitants of Syria, as well as by the modern Turks and Arabs. Josephus states that the balm of Gilead was one of the trees given by the queen of Sheba to King Solomon. See *ASPEN*.

BALME, a village of Piedmont on one of the head streams of the Stura. It is named from a memorable grotto containing a chapel.

BALME, COL DE, an Alpine pass, forming the boundary between Savoy and the Valais, 7,218 feet above the level of the sea. It is much visited, and has a place in which travellers may take refuge.

BALMES, JAMES LUCIO, a Spanish Catholic priest, eminent as a philosophical writer and publicist. He was born at Vich, in Catalonia, of poor and worthy parents, Aug. 28, 1810, died there July 9, 1848. He developed a precocious talent and taste for study in his childhood, having commenced Latin at 7 years of age, rhetoric at 10, philosophy at 13, and theology at 15. In his sixteenth year he entered the university of Cervera, where he remained 4 years, devoting the greater part of his time to the study of the *Summa* of St. Thomas Aquinas, with the commentaries of Bellarmine, Suarez, and Cajetan. After this he endeavored to enlarge the circle of his knowledge as much as possible, by studying general literature, history, poetry, mathematics, politics, and law, and reading the best works of standard authors. At the age of 23 he was ordained priest, and was for a time professor at Cervera. In the year 1840 he commenced his career as a writer. His principal works consist of several able treatises on philosophy, essays and articles on the religious and political condition of Spain, and a treatise on the comparative effects of Protestantism and Catholicism upon civilization, in reply to Guizot. The last-named work is his masterpiece. Balmes was animated with the most ardent sentiments of patriotism and true philanthropy. He resisted the movements of the revolutionary party in Spain, but he sympathized with free and liberal institutions. He was rather desponding in his anticipations respecting the future of Spain and Europe, but the course taken by Pius IX. reanimated his drooping courage and filled him with fresh enthusiasm. In his view, the great hope of the future lay in the union between Catholicism and the great principle of political liberty and modern civilization. This distinguished ornament of the church of Spain, after a short career of 8 years, died at Vich, in the 38th year of his age, and was buried there with all the honors which the civil and ecclesiastical authorities could bestow upon him. His *Filosofia fundamental* has been translated into English by Henry F. Brownson (2 vols., New York, 1857).

BALMORAL, a picturesque locality in the highlands of Aberdeenshire, recently selected

for a summer residence of the queen of England. It is situated 50 miles from Aberdeen, on the banks of the river Dee, and close by the mountains of Lochnagar and Ben Macdui. A commodious royal edifice has been erected in place of the ancient castle.

BALNAVES, HENRY, a Scotch Protestant, born at Kirkcaldy, in Fife, in 1520, during the reign of James V.; died in Edinburgh, in 1579. He studied at St. Andrews, and afterward, in a free school at Cologne, his religious opinions were changed from the Catholic to the Protestant belief. He returned to Scotland, and in 1542 his open profession of the Protestant faith caused his dismissal from the office of secretary of state, conferred on him by Gov. Arran. He now joined the English against the governor, and was arrested and imprisoned in Blackness castle until 1544. He has also been accused of connection with the conspiracy which resulted in the murder of Cardinal Beaton, and was declared a traitor and excommunicated. He was taken prisoner at the siege of the castle of St. Andrew, and in company with John Knox and others was sent to the castle of Rouen, in France, where he wrote a work entitled "Confession of Faith," which was published in 1584. Balnaves returned to Scotland in 1559, and was one of the commissioners on the part of Queen Elizabeth, sent to the duke of Norfolk.

BALOUFEAU, or BALOUFFETEAU, JACQUES, a French *chevalier d'industrie*, born at St. Jean-d'Angely about the end of the 16th century, died in 1628. He married and intrigued with scores of women in different cities and nations. Sometimes he was the Baron de St. Angel, at others the Baron de Sainte Foy. Not content with his triumphs over the credulity of weak women's heads and hearts, he determined to hoax the cabinets of France and England. By discovering a sham conspiracy to the French counsel of state he obtained 200 crowns; the English government was still more credulous; for a similar revelation they gave Baloufeau £2,000 sterling. He was afterward arrested, put to torture, and hanged in France.

BALQUHIDDER, a parish and village in Fifeshire, Scotland, 84 miles W. of Perth. The parish is about 20 miles long by 10 wide, and within its limits Rob Roy performed many of his deeds of daring. His remains now repose in the village churchyard.

BALSALL, or TEMPLE BALSALL, a chapelry in Hampton-in-Arden, Warwickshire, England, with a population of 1160. The remains of the chapel of Balsall, erected in the 12th century, are still here.

BALSAMINA, in botany, 1 of the 2 genera which compose the order of the *balsaminaceae*. It has 10 species, which are natives of the East Indies and China, but some of which have long been known as favorite ornaments of European gardens. The generic characteristics of the *balsamina* are a succulent stem filled with a watery juice, simple leaves growing without

stipules, irregular flowers with one of the petals spurred, 5 stamens, distinct stigmas, and a capsule with 5 valves, and remarkable for the elastic force with which it bursts and expels the seeds. The *B. hortensis*, or garden balsam, a beautiful and popular annual, with finely variegated white, pink, red, purple, and lilac flowers, is the best known member of this genus. This loves a moist rich soil, and is raised best from the seed in a moderate hot-bed. The juice of some of the species of *balsamina*, mixed with alum, is used by the Japanese to dye their finger nails red.

BALSAMINA, CAMILLA, an Italian singer born at Milan, about the end of the 18th century, died August 9, 1810. Gifted by nature with a beautiful contralto, and by industry with a flexible vocalization, she was greeted with enthusiasm wherever she went. In 1807, she was prima donna at the court of Prince Eugène, viceroy of Italy. Called to Paris for the occasion of the marriage of Napoleon with Maria Louisa, she was caught in a terrible storm on Mont Cenis. Her sufferings on this occasion threw her into a rapid consumption, and she returned to Milan only to die.

BALSAMO, PAOLO, an Italian priest and agricultural writer, born at Termini, in Sicily, March 7, 1763, died at Palermo, in 1818. He was professor of agriculture at the university of Palermo, and subsequently was sent by the Neapolitan government on a mission to Lombardy, France, and England. In England he became acquainted with Arthur Young, and subsequently translated some of his essays into Italian. On his return to Naples, he exerted much influence upon the financial concerns of the two Sicilies by his suggestions of reforms which were adopted by the king, who made him librarian of the royal library. Balsamo's labors and writings gave a powerful impulse to the agricultural interests of Naples and Sicily.

BALSAMS. By the French chemists this word is applied only to those resinous vegetable juices which contain benzoic acid; and of these there are but six, namely, the balsam of Peru, the balsam of Tolu, dragon's blood, benzoin, storax, and liquid amber. But by the Germans and English the term is not thus limited in its signification, being applied to all resins obtained from trees and shrubs, as also to some pharmaceutical preparations, dividing them into two classes—one containing benzoic acid, and the other not. The former class, consisting of the 6 named, are aromatic, resinous substances, composed of resin, benzoic acid, and a volatile oil, the last, according to the quantity present, tending to give liquidity to the substance. They are soluble in alcohol, and water being added resin is precipitated, making the fluid milky. In ether they are only partially soluble, and not at all in water. The peculiar smell of the balsam is lost by exposure to the air. Their taste is described as hot and acrid. The plants which furnish them belong to the orders *styracae*, *leguminosae*, and *balsamaceae*. The second class of balsams are the semi-liquid and resinous juices

composed only of resin and a volatile oil, and obtained mostly from plants of the orders *conifera*, *terebinthacea*, and *leguminosa*. The turpentine, and Canada, copaiba, and Mecca balsams, belong to this class. They do not differ essentially in their properties from the other balsams. The use of balsams is principally in medicine, but they also enter into the composition of varnishes, and are employed for some other purposes, which will be mentioned in the description of each one. Benzoin and turpentine will be treated of under their own titles.—A full history and description of the balsam of Peru, by Dr. Pereira, may be found in the "Pharmaceutical Journal" (English); and an able paper, made up from this, is published by Dr. Muspratt in his recent work on chemistry, with which will be found drawings and botanical descriptions of the plants producing the balsam. So much error and uncertainty has prevailed in the accounts of this substance, that very elaborate investigations have been made by Dr. Pereira and others to define its true character, and that of the plants producing it. There appear to be 2 balsams of Peru, one called the white balsam, and the other the black, which is the real balsam of Peru of commerce. Both are obtained from the *myrospermum pubescens* of De Candolle, the one from the fruit by pressure, and the other by incision from the stem; and both are procured exclusively "from the so-called Balsam Coast in Central America," the Pacific coast of San Salvador, between 13° and 14° N. lat. Sonsonate appears to be the most important district for the production of the balsam; and the tree which there yields it is possibly a different species from the *myrospermum pubescens*, and has been temporarily called by Dr. Pereira the *myrospermum* of Sonsonate. Black balsam exudes from incisions in the trunk of this tree, and is said to be an admirable remedy for effecting the speedy cure of wounds. Spirit of balsam is made from the flowers, oil of balsam, an excellent anodyne, from the seeds and nuts, and white balsam from the capsules. The tincture or essence of balsam called *balsamito*, is extracted from these. The methods practised by the Indians of preparing the white and black balsams are very differently described by different authorities, and these descriptions are given in the paper referred to. The black balsam is a sirup of the consistency of honey, of a deep red brown color, translucent, of a strong smell, and intolerably acrid bitter taste. Owing to its high price it is found profitable to adulterate it, and this is done with olive oil, oil of turpentine, and copaiba. It is conveniently tested by mixing a few drops of it with twice as many of concentrated sulphuric acid, and then adding water—if pure a little resin is obtained. Copaiba may be detected by the smell. One thousand pints of good balsam should, by the benzoic acid it contains, saturate 75 parts of crystallized carbonate of soda. The composition of the balsam according to Stolze, is as follows:

	per cent.
Brown, slightly soluble, resin	1.40
Brown resin	20.70
Oil—cinnametin	69.08
Benzole and cinnamic acids	6.40
Extract	0.08
Loss and moisture	0.96
	100.00

This balsam is used in perfumery, in the manufacture of sealing-wax, lozenges, tinctures, pomatums, and when vanilla is expensive, it is used as a substitute for this in liqueurs, chocolate, &c.—Balsam of Tolu is obtained in New Granada, South America, in the region of Tolu and Turbaco, a few miles south of Carthagena, and also along the Magdalena river. The tree which produces it is the *myrospermum toluiferum*. The balsam differs very little from that of Peru, only it becomes resinified more easily. Their chemical composition is the same. When fresh it is of a reddish brown color, soft like turpentine, but gradually becomes harder. It has an agreeable odor like the benzoin, and a sweetish taste. It is often adulterated with resin, which may be detected by the fumes of sulphurous acid, which are set free, when sulphuric acid is poured upon it, and the mixture heated. If no resin is present, the odor of benzoic and cinnamic acid is perceived.—Dragon's blood is the product of an East India tree, called the *calamus draco*, and is also obtained in Africa and South America from a number of other trees. It is prepared in the form of drops and small balls of a dark red color, and is also put up in sticks, and irregular shaped cakes. Its use is for coloring varnishes, staining marble, preparing gold lacquer, and tooth powders and washes. It was formerly used in medicine as an astringent, but is now regarded as inert.—Storax is rarely met with unadulterated with foreign matters; and the various mixtures sold by this name have caused uncertainty as to its real character. It is often confounded with liquid amber, but is distinguished from it by its peculiar vanilla-like odor, which, as well as the *styrax* family of plants, from which it is procured, connects it more closely with benzoin. The species of the tree is the *officinalis*; it grows in Asiatic Turkey, and the shipments of this balsam are from Trieste. It is of liquid consistency, and of gray, brown, or black color, according to its purity. Its uses are in medicine, as an expectorant, and as an ingredient in ointment.—Liquid amber is the resinous product of the common sweet gum tree of the United States. It is only, however, in the warm latitudes of Mexico and Louisiana, that this tree yields its balsam. This is of a thin consistence, yellowish color, agreeable smell, and acrid taste. It becomes thicker, of darker color, and contains a larger proportion of benzoic acid, as it increases in age. It may be used for the same purposes as storax, but is more highly esteemed and better known in Europe than in this country.—The Chinese lac, or varnish, is described by Dr. Un as a balsam of the benzoic acid class, and derived from the bark of the *augia sinensis*.—

The Canada balsam is the gum that exudes from the balsam fir, *abies balsamea*, of the northern states. It is collected by breaking the vesicles which form on the trunk and branches, and receiving their contents in a bottle. Its color is whitish, slightly yellow, and its odor like that of the turpentine. Its analysis is thus given by Bonastre:

	per cent
Essential oil.....	18.6
Resin, soluble in alcohol.....	40.0
Resin, soluble with difficulty.....	38.4
Elastic resin.....	4.0
Bitter extraction and salts.....	4.0
	100.0

The copaiba balsam is obtained from the *copaiba officinalis*, a tree of Brazil and Cayenne. It is of yellowish color, semi-liquid consistency, bitter sharp taste, and a disagreeable suffocating smell. It will dissolve one-fourth its weight of carbonate of magnesia, and continue translucent. With alkalies it gives crystalline compounds. It contains an oil that dissolves caoutchouc. Its composition, according to Durand,

is:

	per cent
Volatile oil.....	38.00
Copaiba acid.....	52.75
Brown soft resin.....	1.66
Water and loss.....	7.59
	100.00

Its use is principally in medicine, and also for queurs, and for making paper transparent. It is often largely adulterated with castor oil, and with turpentine.—Mecca balsam, called also popbalsam, is the product of the *balsamodendron Gileadense* of the East. Its properties are similar to those of balsam of copaiba and quid turpentine. See BALM OF GILEAD.

BALSTHAL, a beautiful valley, 16 miles long, on the Dünne canton Soleure, Switzerland; pop. 8,500. The hamlet of Balsthal, op. 1,000, is the principal place. The pass and village of Klus (pop. 800), with forges, and iron foundries, and the castles of Falkenstein and Blauenstein, are at one end of the valley.

BALTA, a town of Russian Poland, on the Kodema, one of the tributaries to the Bug, in the government of Podolia, 132 miles E. S. E. of Kamieniec, pop. 7,500. It is thriving and well built. A suburb in the province of Kherson, on the opposite side of the river, is just the reverse.

BALTARD, LOUIS PIERRE, a French architect and engraver, born at Paris, July 9, 1765, died Jan. 22, 1846. He studied landscape painting, but Peyre, the architect of the Odeon, directed his attention to architecture, and he applied himself to the study of this art with so much success that he was appointed architect of the Pantheon and of the Paris prisons. The hapels of the houses of detention of St. Lazare and St. Pelagie, were executed by him. A remarkable structure, which in 1820 he erected upon the Boulevard Beaumarchais—a salt magazine, was unfortunately demolished a few years afterward. The great hall of justice in Lyons,

founded in 1824, was devised and almost completed by him. In acknowledgment of his eminent genius he was put on the committee of public works, and on the committee of buildings connected with the civil service. In 1818 he became professor at the academy of fine arts. He also acquired fame as an engraver and as the author of many superb works, descriptive of monuments, and illustrated by his own plates. He was the publisher of the "Athenæum," an art journal with engravings. He excelled at the same time in the engraving of historical and miscellaneous subjects.

BALTI, or BALTS, the family name of the kings of the Visigoths. Alaric, the first among the barbarians who took and sacked Rome, was one of them. This family existed in Spain until the year 711. Next to the Amals, the Balts were considered among the Goths the most illustrious family. The founder was a hero who on account of his audacity took the name of Balt or Baltha, signifying audacious.

BALTIC SEA, an inland sea, in the N. W. part of Europe, surrounded and very nearly enclosed by Sweden, Finland, Russia, Prussia, Germany, and Denmark; and communicating with the Cattegat and the North sea by the Sound and the Great and Little Belt. It begins at the verge of Norway, in long. 7° E. and extends to St. Petersburg, in the gulf of Finland, in long. 30° 28' 45" E. Its extremes of latitude are Wismar, in Mecklenburg, 53° 50' N., and Tornea, on the gulf of Bothnia, 65° 51' N. Its greatest length between these points is 900 miles. Its width varies from 180 miles—between Carlsrona and Memel—to 75 miles. Its area, including the gulfs of Bothnia, Riga, and Finland, is estimated at about 160,000 square miles. This is exclusive of the Cattegat and the Skager Rack, for which a further addition of 18,000 to 19,000 miles must be made.—The direction in which the Baltic penetrates inland is extremely tortuous. From its straits it runs first east to Memel, about 800 miles, then north as far as the latitude of Stockholm 59° 21', a further distance of 350 miles. It is to these portions that the term Baltic sea is in its limited sense restricted; for at this point it separates into two great gulfs. Of these the gulf of Finland runs nearly due east between Finland and Revel; while the gulf of Bothnia runs a little east of north between Finland and Sweden. The gulf of Finland is 200 miles in length, with a mean breadth of 60 to 70 miles. That of Bothnia is about 400 miles long, with 120 miles of average width, although at its narrowest part, at Quarken, opposite Umea, it is not above 40 miles wide; another important inlet is the gulf of Riga, or Livonia, south of the gulf of Finland, and stretching into the countries from which it derives one of its names, 80 miles from east to west, and about 90 from north to south.—The Baltic is extremely shallow, and its navigation is in many places exceedingly intricate. Its entrance or sound is crowded with islands and shoals, and as the Baltic

itself has no regular tides, the varying currents depending upon prevailing winds and changing temperature, add no little to the difficulties of the navigator. The western portions of the sea have a depth of not more than 16 fathoms. Toward the east it deepens, and midway between Memel and Oeland there is found from 60 to 100 fathoms water. The gulf of Finland suddenly shoals from 50 fathoms to from 4 to 16 fathoms. The gulf of Bothnia has no greater average depth, but its navigation is less obstructed by shoals and sand-banks.—The basin of the Baltic is difficult to determine accurately, as, with the exception of the mountains of Sweden and Norway on the north and north-west, all its other borders stretch away in vast plains, occupying more than half of Europe. Toward the south-east, the plain is unbroken to the shores of the Black sea, while on the east there are no hills (except the insignificant elevations of Valdai) between the Baltic and the Ural mountains. Thus the vast basin has been calculated to contain at least 800,000 square miles.—This great district is exceedingly well watered; upward of 240 rivers empty their waters into the Baltic; the lakes in its neighborhood, and with many of which it is connected by rivers, are almost innumerable; and altogether this sea receives the drainage of nearly one-fifth of Europe. The most peculiar part of this basin is in its south-west corner. Here, although the nearest mountains are those of the Hartz, yet the basin of the Baltic is not above 20 or 25 miles wide. The Elbe, which runs within 50 miles of the Baltic, empties its waters into the North sea; so also the Eyder, which rises close to its shores. These and their tributaries of course belong to another system. Yet so flat is the country that the different waters are continually uniting, and a canal 8 miles in length has served to connect the Baltic with the Elbe, by joining the rivers Trave and Stricknitz below Lübeck.—The Baltic receives the waters of the Motala-Elv, the lakes of Ladoga, Onega, and Mælar; the rivers Niemen, Vistula, Oder, and Duna, and of numerous other smaller streams. The rivers which flow from the south and south-east are the longest, varying from 330 to 750 miles in length. The great amount of mud and sand carried down into the sea by the rivers which empty their waters into it, has considerably changed its soundings in various parts, filling up the mouths of many of the rivers and harbors, and generally raising the bed of the entire sea, creating many small islets and shoals, and rendering navigation, particularly along the Danish shores, difficult and dangerous. Being a close sea, with its entrance from the approach of the tidal wave, the Baltic is not subject to the phenomena of tides. There is, however, observed at irregular periods a rise in the water, equal sometimes to $3\frac{1}{2}$ feet. This singular phenomenon occurs at all seasons of the year, but chiefly in autumn or winter, or at a time of heavy rain, or during lowering weather,

even if this be unattended with rain. The water maintains its height for days, and sometimes weeks, and often overflows its usual limits. Dr. Shulten, a Swede, in 1804, by a series of close observations, ascertained satisfactorily that this rise was occasioned not by heavy rains, winds, melting snow, or ice, to all of which it had been ascribed, but by the unequal pressure of the atmosphere upon different portions of the surface of the sea; the greatest height of the water corresponding to the greatest depression of the barometrical column, and the greatest variation of the barometer in that region, $2\frac{1}{2}$ inches, corresponding to a rise and fall of 34 inches in the water. This theory has since been adopted by most of the savans of Europe. Owing to its numerous tributary rivers, and to its current flowing always outward, the waters of the Baltic are much less salt than those of the North sea or the Atlantic ocean. The relative proportions may be stated as about $\frac{1}{10}$ to $\frac{1}{12}$ in the North sea. This freshness, combined with their shallowness and confined situation, renders these waters peculiarly liable to congelation. The entire sea is every year more or less encumbered with ice, and its straits are usually impassable from December to April. Severe frosts made the sea passable in its widest parts, between Denmark and Prussia, in the years 1333, 1399, 1423 and 1429. Later Charles XII. marched an army across the Sound and the two belts to attack Denmark, and so late as 1809 a Russian army crossed the gulf of Bothnia on the ice. There seems to be no doubt that the Baltic is decreasing. In point of fact the innumerable lakes which lie between it and the White sea, are but the remnants of what was once a continuous sea. This is proven by the existence of similar animals in those lakes, although these are no longer salt. A gradual drainage is no doubt lessening the volume of all the bodies of water still left in the basin of the Baltic, and it is to be supposed that in course of time many important changes will thus be made in the face of this vast tract. It is in the south that such changes have been most remarked in modern times. Lübeck, which, when originally built, was undoubtedly a seaport town, is now 12 miles from the shore. The isle of Rügen is nearly joined to the German shore, and annually extends its bounds, while the names of its various parts show plainly enough that not long since that which is now one large island was a cluster of small islets. These and other circumstances prove sufficiently that the shores of the Baltic are gradually but surely rising. Olaf Dalin, a Swedish mathematician, calculated this rise at one inch per annum, and this is probably not too high. The Baltic is extremely rich in fish of various kinds, the taking of which forms an important branch of industry with the inhabitants of its borders. Seals are found in considerable numbers, and are chased for their oil and skins. Whales are sometimes seen, but their

appearance is held to be an evil omen. Along the Prussian shores and those of the isle of Rügen quantities of amber are annually collected. The countries surrounding the Baltic are all very rich in useful natural products, and its waters are therefore crowded with the ships of all nations. The ancients were but slightly acquainted with the Baltic. By them it was called the *Sinus Codanus*, gulf of the Goth-Dane. The origin of the name Baltic is not certainly known, some etymologists deriving it from the Danish *belt*, a girdle; some from the Lithuanian *balta*, white, in allusion to the great quantity of snow which annually falls in its neighborhood. Others have referred it to the Balti, described in the previous article. The name, however, is old, and appears to have been first used by Adam of Bremen, who described the sea in the 12th century. The most common name for the sea, among the different people resident on its borders, is *Ost-sea*, Eastern sea, to distinguish it from the Western sea or Atlantic ocean. The most important ports of the Baltic sea are St. Petersburg, Dantzic, Riga, Stralsund, Memel, Lübeck, Stockholm, Copenhagen, Carlsrona, and Königsberg.

BALTIMORE, a northern county of Maryland, bordering on Pennsylvania and on Chesapeake bay, bounded on the S. and W. by the Patapsco river, and comprising an area of some 700 sq. miles. A large portion of the surface is hilly, and many eminences rise to a height of 800 feet above tidewater. The principal varieties of rock are granite, gneiss, hornblende, limestone, and soapstone, and a ledge of primitive rock traverses the south-eastern part of the county. Copper, iron, and chrome are found in considerable quantities, and there are beds of red and yellow ochre and magnesia. Much of the land is rocky, but the soil is generally productive, and suitable for grain or pasturage. In 1850 it yielded 755,224 bushels of Indian corn, 294,187 of wheat, 280,288 of oats, and 21,810 tons of hay. There were 22 cotton factories, 4 woollen factories, 10 of agricultural implements, 26 of coaches, 111 of cabinet ware, 4 of nails, 5 of chemicals, 18 paper mills, 2 glass-works, 10 brass foundries, 13 iron foundries, 46 flour and grist mills, 8 potteries, 2 powder mills, and 4 iron furnaces. The amount of capital invested in manufactures was \$9,929,282, and the value of the articles produced was \$24,540,014 per annum. There were 162 churches in the county, 22 newspaper offices, and 10,808 pupils attending public schools. Three railroads terminate in this county, which is the most important and populous in the state. Capital, Baltimore; pop. in 1850, 210,646, of whom 6,718 were slaves.

BALTIMORE, a city of Baltimore county, Md., ranks 3d in the United States for size and population, is situated in lat. 39° 17' N., long. 76° 37' W., on an arm of the Patapsco river, 14 miles from its entrance into the Chesapeake bay, and 178 miles from the Atlantic. It is 38 miles N. E. from Washington;

97 S. W. from Philadelphia; 185 S. W. from New York; 398 S. W. from Boston; 160 N. N. E. from Richmond; and 590 N. N. E. from Charleston. The arm of the Patapsco on which the city is situated is about 3 miles long, varying in width from $\frac{1}{4}$ of a mile to $1\frac{1}{2}$ mile, having its extreme breadth opposite to the eastern part of the city, a suburb called Canton. This inlet gives an easy access to the city, and a harbor sufficiently capacious to contain 2,000 vessels. This harbor is divided into an outer and inner bay; the inner bay is styled the "basin," and, having but 12 feet of water, is only navigable for small vessels. Great numbers of the bay craft moor in this basin. The outer bay consists of a harbor between Fell's point and Canton on the north and east, and Whetstone point opposite, on the south, and is capable of floating the largest merchant ships. Owing to the accumulation of deposit for many years, the harbor had recently become shoal in numerous parts, but arrangements have been now made and a contract established for deepening the bed of the outer basin, and an appropriation has also been made by Congress to render the port available even for ships of the line and war steamers of the largest class. The entrance to the port is defended by Fort McHenry, situated on a point of land between the harbor and the Patapsco. This was successfully defended against the British fleet in 1814. An immense fortification is now in progress of construction on Soller's point flats, about 8 miles below the city. The general appearance of Baltimore is striking and picturesque, and the city appears to advantage from nearly every point of view. It is regularly laid out, yet with sufficient diversity to avoid tameness, its surface is undulating, its streets of good width, so that the most ample sewerage is obtained, and every thing of offensive nature being easily carried off, Baltimore, aided by its fine climate, is one of the healthiest cities in the American union, or, indeed, the world. An aspect of cheerful elegance pervades the city, which is peculiarly attractive to strangers; the larger mansions are generally in good taste, and not being densely crowded together, as in some of the more northern cities, but having in many cases handsome side-yards attached, they give an impression of space and comfort. In smaller dwellings, especially those for the workers in trades, neatness and thrift are displayed. In very rare cases are any of the Baltimore mechanics forced to live in large buildings, occupying 1 or 2 rooms for themselves, but nearly every respectable workman either owns his comfortable dwelling, or is able to engage one at a reasonable rent. Long rows of these modest but pretty tenements are to be seen in the highest and best neighborhoods of the city, as well as every other part of it; they form one of its marked features. The light and cheerful appearance of the city is greatly owing to the quality of the brick used in building.

The clay in the vicinity is of fine texture and agreeable color, and when taken from the kilns is neither a very dull nor a glaring red, but pleasing to the eye. The chief points of view from the ground elevation in the city, are known as Federal and Loudenslager's hills, the first named standing on the south side of the inner basin, crowned by a signal station, and commanding an extensive prospect of the shipping, the city to the north and west, as well as the river and bay. The other hill lies to the east of Fell's point, and overlooks the principal docks and ship-yards, the Canton suburb, and the surrounding country. Beside the main streets, 8 great avenues on the east, north, and west, have been surveyed, and are now partly graded, paved, and built upon. These are mostly some distance from the present lines of building, but in the course of a few years will add greatly to the beauty of Baltimore, being at least 150 feet wide, planted with trees, and forming an elevated drive around the city.—It was not until 1729, that the assembly of Maryland passed an act entitled "An Act for erecting a town on the north side of the Patapsco in Baltimore county, &c.," although settlements had been made at an earlier date, the first of which was by Charles Gorsuch, a Quaker, who, in 1662, patented 50 acres of land on Whetstone point, opposite to the eastern section of the present city. In 1682, David Jones, the first settler on the north side of the harbor, gave his name to the small stream which now divides Baltimore into "old town" and "new town." On Jan. 12, 1730, a town of 60 acres of land was laid out by the county surveyor and commissioners, west of Jones' falls, and called Baltimore in honor of Cecilius Calvert Lord Baltimore. In the same year William Fell, a ship-carpenter, having purchased a tract east of the falls, called it Fell's point, after his own name, which it still bears. In 1732, a new town of 10 acres, in 20 lots, was laid out on the east of the falls, and called Jonestown, in honor of David Jones, the first settler. This name has long been forgotten, and as a settlement existed there before that of Baltimore, it was called "old town." Jonestown was united to Baltimore in 1745, dropping its own name, and 2 years afterward Baltimore, which properly lay up about the head of the "basin," near the foot of the present South Charles street, was extended as far eastwardly as Jones's falls, under an express provision that there was nothing in the act recognizing a right to "elect delegates to the assembly, as representatives from the town." This was the earliest manifestation of that singular jealousy, which has ever since been shown in the legislature by the Maryland county members against the city of Baltimore. In 1752, Baltimore contained but 25 houses and 200 inhabitants; a sketch of the town made in that year by Mr. John Moale, now hangs in the rooms of the Maryland historical society. In 1756, several of the unfortunate Acadians, who

had been deprived of their property, and driven from their homes by the British, took refuge in Baltimore, and were hospitably received. The county town was removed from Joppa to Baltimore in 1767, and the courts and records established there; during the next year provision was made for the erection of a court-house and prison. The court-house stood upon the site of the present battle monument in Calvert street, but much higher, and the old-fashioned whipping-post was to be seen adjoining until 1808, when the old court-house was pulled down, and the existing ample structure erected on Monument-square and Lexington street, north-west of the former building. This contains convenient accommodations for 8 courts as well as the grand jury, and various offices. The judges and clerks of the court are elected by the people, the former for 10 years, the latter for 6. The Baltimore bar was early distinguished for great talent, and is still characterized by ability, although not of that degree exemplified by William Pinkney, William Wirt, and Luther Martin, in former days. Near the court-house is the record office, a substantial erection of solid granite, fire-proof throughout. The former jail stood on the banks of Jones's falls, near St. Paul's lane, before the bed of the stream was altered. In 1800, the present jail was erected higher up the falls. This has long been totally inadequate to the wants of the city, and a new jail containing all the modern improvements in prison discipline is now being built, while a house of correction has just been completed for juvenile delinquents. In 1769, the "Mechanical" fire company was organized, and purchased their first engine for \$250. There are now over 20 companies, with a large force of men and powerful apparatus. In 1773, William Goddard began the first newspaper in Baltimore, entitled the "Maryland Journal and Baltimore Advertiser." The principal newspapers now published are the "American," "Patriot," "Sun," "Argus," "Clipper," several of smaller note, and 2 German daily papers, the *Correspondent* and the *Wesker*. In the same year (1778) communication was opened with Philadelphia by means of stage coaches, sailing packets, and a theatre was also erected on Albemarle street. In 1775, Baltimore contained 564 houses, and 5,934 inhabitants. In 1776, Congress being obliged to remove from Philadelphia on account of that city being in possession of by the British, established itself in Baltimore, in Jacob Fite's building, on the south-east corner of Baltimore and Liberty streets. John Adams says of this building in his journal: "The congress sits in the last house at the west end of Market street (as Baltimore street was formerly called), on the south side of the street; a long chamber, with two fire-places, two large closets, and two doors. The house belongs to a Quaker, who built it for a tavern." This "last house at the west end" is now almost in the very heart of the city; part of it is still standing, and goes by the name of Congress hall, but the interior arrangements

have long since been altered. In 1780, the first custom-house in Baltimore was established; before that time, all registers and clearances were obtained at Annapolis. In 1784, the first market house which stood near the intersection of Market with Gay streets, having been found inadequate to supply the wants of an increasing population was superseded by three new ones; the centre or Marsh market, the Hanover, and the Fell's point market. Several other large and small ones have been added to these since that time, so that the city is abundantly furnished with provisions of all kinds. At the same time, 1784, the streets were lighted with oil lamps, and 3 constables and 14 watchmen appointed for the security of the town. For very many years past, great complaint has been made in regard to the police force of Baltimore, it has been quite insufficient to preserve order in so large a city, but repeated outrages have, during the year past (1857), called for the establishment of a numerous corps of able-bodied and active conservators of the peace. The new police number between 500 and 600 men, who are distinguished by a uniform. At the close of the revolutionary war, the commerce and trade of the city rapidly increased, and a large number of intelligent merchants settled there. Some of the most enterprising of these were from the north of Ireland, of Scotch descent, and by their exertions and wealth, Baltimore became famed as a commercial port. Lines of packets and stage coaches were established for communication with points on the shores of Chesapeake bay, as well as in the interior of the state; in 1787 turnpikes were authorized to Washington, Frederick, and Reisterstown, but were not fully completed until 1809. In 1789, the course of Jones's falls within the city, which ran along by the site of the present court-house, was altered by cutting a new channel from Bath street to Gay street bridge, and the old bed of the stream was filled up. In 1792 a large number of refugees who had escaped from the massacre of the whites by the black slaves of St. Domingo, came to the city, where many of their descendants still reside. In 1796, the population being about 20,000, and the town having attained a high degree of prosperity, it was erected into a city, the corporation being styled the "Mayor and city council of Baltimore," and James Calhoun was elected as the first mayor. Since that date the city has rapidly increased in population, especially within the last 15 years, during which time the ratio of increment has been such as to surprise those even best acquainted with the resources and capabilities of the place. According to the following table, the population was,

In 1790.....12,508	In 1880.....80,625
1800.....24,514	1840.....102,213
1810.....35,588	1850.....169,054
1820.....62,788	1855.....311,000

In the latest of these dates, the population is rated according to the state census, and as the business and extent of the city has very largely

increased in the last two years, it may now be fairly estimated at not under, and probably above, 280,000. Of the 169,054 persons under the national census of 1850, 140,066 were whites, 28,388 colored, 25,442 free, and 2,946 slaves. Of the free inhabitants, 180,491 were natives of the United States, and 35,617 of foreign countries.—To education great attention has been paid, and it is worthy of note that, while institutions of learning endowed by the state have in several instances proved signal failures, those in which the city of Baltimore has alone been interested, have generally flourished, particularly those of public character. In 1791, St. Mary's college was established; this was a Roman Catholic institution under the charge of the Sulpitian order, to which was united a seminary for the education of priests. This establishment maintained itself with vigor for many years, possessing very extensive grounds and buildings, a Gothic chapel, and a library of 16,000 volumes. The seminary is still kept up, but the college was suppressed in 1851 by a mandate from Rome. Loyola College, in another part of the city, supplies its place for Roman Catholics; this is exclusively under the charge of Jesuits, and was formally opened Feb. 22, 1855. Baltimore College was chartered in 1803, and subsequently united to the medical school, under the title of the "University of Maryland," but the academical department, independent of the school of medicine, alone went into operation. This academy was not generally flourishing, and in 1854 was finally given up, and a scientific school established in the building. The medical school, on the contrary, has always been active; at one time it stood highest in the United States, and is now in excellent condition. It is a massive pile of building on Lombard street, and was completed in 1818. The Washington university was established in 1828, but has never been very flourishing, and its medical school is the only department ever organized. The Baltimore female college was chartered by the state in 1829, and in its course of study and power of conferring degrees, is similar to the colleges for male students. The convent of the Visitation, and of the Carmelites, which are both extensive nunneries, have very large female schools attached under charge of the sisterhood; and beside these there are many excellent private academies for both sexes. But it is in her public schools and their admirable management under the city government, that Baltimore may be most justly proud, and her school system is not excelled, if equalled, in any city of the union. The first public school was opened in 1829, and we gather from the 28th annual report of the commissioners to the mayor and city council, that there were (in 1857), under the control of the board, 77 schools, classified as follows: 1 male central high school; 2 female high schools, the eastern and the western; 12 male and 14 female grammar schools; 14 male and 28 female primary,

and 6 evening schools. The number of pupils on the roll in the day schools, is 11,414. The number of pupils in the evening schools is 495. The whole number of pupils in all the schools, is 11,936, an increase in one year of 1,848. The number of paying pupils is 8,168. The number of free pupils is 8,778. "While it is required of those who have the ability, that they shall pay the moderate sum of \$1 per term of 12 weeks, for the tuition of each pupil, there is no child in the city that need be excluded from the benefits of a substantial education, in consequence of the inability of its parents to contribute even that small amount to the object. To prevent imposition in reference to this necessary regulation, the free pupils are admitted by special acts of the board, on application to the commissioners, who are required to examine carefully into the circumstances of the applicants. They have thus opened to them by the liberality of a generous public, the avenues through which they may be led to respectability and usefulness; and this at a very moderate cost to the city."—The number of teachers in the public schools is 258, of whom 50 are males and 208 females. The Bible is daily read in all the schools, the version of King James to the Protestants, and the Douay version to the Roman Catholics, in separate apartments. A floating public school, for the training of boys intended to be sailors, will immediately go into operation; and it is urged by the commissioners that the central high school shall be invested by the legislature with the power of conferring degrees. The beneficent working of the public school system in Baltimore is exemplified by the fact that "not a single graduate of the schools has ever been charged with or convicted of crime." The latest feature in the means of intellectual culture belonging to the city is the Peabody institute, which has just been founded by the munificence of Mr. George Peabody, a wealthy American banker of London, but formerly for many years a resident of Baltimore. His sumptuous gift of \$300,000, to be increased to \$500,000, is to establish a gallery of the finest works of art, a library of the first class, and, during certain seasons of the year, concerts and lectures of the highest excellence. The lot on which the institute will stand faces the Washington monument.—From her several monuments, Baltimore is frequently designated as the "monumental city." In 1809 the legislature granted permission to erect a monument to Gen. Washington. This was erected at the intersection of Charles and Monument streets, on a lot of ground given for the purpose by Col. John Eager Howard. It is a Doric column of white marble, rising from a base 50 feet square, and 85 feet high. The shaft of the column is 160 feet high, and is surmounted by a colossal statue of Washington 15 feet high, making the entire height 175 feet.—The battle monument is in the centre of Monument square, formed by the intersection of Calvert and Fayette streets. This is also of

white marble, and is 53 feet high. It was erected to the memory of the citizens who fell in the defence of Baltimore, Sept. 12 and 13, 1814. It consists of a square base with a pedestal ornamented at 4 corners with a sculptured griffin. A fascial column rises from the base, with bands, upon which are inscribed the names of those who perished. A statue representing the genius of Baltimore surmounts the column.—Two smaller monuments, commemorative of the attack on Baltimore, are in other parts of the city. One of these, to the memory of Wells and McComas, 2 lads, who shot the British commander, Gen. Ross, and were instantly killed themselves; the other is erected to Col. George Armistead, the defender of Fort M'Henry in 1814. It was on this occasion that the famous song of the "Star Spangled Banner" was composed by Francis S. Key.—Soon after the war of the revolution, much inconvenience was felt for want of banking facilities, and the bank of Maryland was established in 1790. The failure of this institution in 1834, caused in the succeeding year the most frightful mobs, which sacked several houses belonging to prominent directors of the bank. In 1792 a branch of the United States bank was established in Baltimore, the charter of which expired in 1835. In 1795 the bank of Baltimore was chartered; in 1804 the Union bank of Maryland; in 1806 the Mechanics' bank; and in 1810 the Franklin, Marine, Farmers and Merchants, and the Commercial and Farmers. Other banking institutions were chartered in 1824, '35, and '36, but the banking capital of the city is not over \$8,000,000. There are 2 savings banks; one incorporated in 1817 has constantly on deposit more than \$2,000,000, on which the bank allows the depositors 4 per cent. interest, as well as an extra dividend every 8 years. All persons connected with the bank, excepting the president and bookkeepers, serve without compensation. Several other institutions of similar character have been lately established, in some of which even as small a sum as 5 cents is received.—In 1812 the first steamboat, called the Chesapeake, was placed upon the line to Philadelphia via Frenchtown and New Castle, Delaware.—On July 4, 1828, the corner-stone of the Baltimore and Ohio railroad was laid in the presence of an immense multitude by the venerable Charles Carroll, of Carrollton. This road is now completed to the Ohio river, and is one of the grandest works of its kind in the world. It brings into the city the produce of the great West, and also enriches the state by rendering available the inexhaustible mineral deposits of the regions through which it winds, as well as the coal-beds of the Cumberland hills. The Baltimore and Susquehanna railroad, the Philadelphia, Wilmington, and Baltimore railroad, and the Washington branch of the Baltimore and Ohio roads, are all in good condition. All great thoroughfares, but, excepting the last named, not profitable to the stockholders.

There is also a railroad from Annapolis, the state capital, which joins the Washington branch road.—The "Tide-water" canal, and the Chesapeake and Ohio canal, have neither proved of importance, so far as the interests of Baltimore are concerned.—The total receipts of Cumberland coal in Baltimore, for the year 1856, were 446,981 tons; of grain, 11,048,700 bushels; inspections of flour and meal, 1,000,589 bbls.; exports of flour, 621,280; tobacco inspected, 59,989 hhds.—With the vast increase of the city in the last few years, her foreign commerce has not kept pace, and is not of the same character that it was 80 years ago.—But in all kinds of vessels Baltimore excels; her shipwrights are among the very first in the United States, and many of the best and swiftest ships of our mercantile marine, the famous Baltimore clippers, have been launched from the dockyards of Fell's point.—Many of the public buildings are worthy of so large a city. The exchange is the largest. It contains the custom-house, post-office, merchants' bank, exchange reading-rooms, a vast rotunda for public sales, &c., &c. The Athenæum is of the Italian style of architecture; it contains the rooms of the historical society; the Baltimore library, containing 16,000 volumes; and the mercantile library association, a very flourishing institution, with a large number of members, and 15,000 volumes on its shelves. The Maryland institute, "for the promotion of the mechanic arts," is a large structure, 355 feet long by 60 wide; it was built upon piles, and over the centre or Marsh market. An annual exhibition of the products of American mechanical industry is held in the main hall, which is 260 feet long. It also contains a library, lecture-rooms, school of design, chemical school, &c. The present city hall, a very mean building, will soon be succeeded by an elegant structure, at the intersection of Fayette with North and Holiday streets.—Many of the churches are very fine. The Roman Catholic cathedral, the most imposing, is in the form of a cross, and surmounted by a lofty dome and 2 bell towers. Baltimore being the see of the Roman Catholic primate of the United States, the stranger, on high church days, may visit the cathedral, listen to exquisite music, and witness the full pomp of the Roman ceremonial. St. Mary's chapel, the church of St. Ignatius Loyola, St. Alphonsus, and many others, are rich in architecture and decorations. The Protestant churches are very numerous, and many are elegant.—Of other public buildings, the vast state tobacco warehouses well repay inspection. The Maryland penitentiary, the hospitals, infirmary, insane asylums, and poor-house, are all under excellent discipline. Many charitable institutions relieve distress; the widows' home, the male and female orphan asylums, both Protestant and Catholic, the humane impartial society, &c., &c., are all active in usefulness.—Several beautiful cemeteries adorn the outskirts of the city, the

environs of which are remarkably attractive.—A fine climate, exemption from virulent diseases, the comforts and luxuries of life in profusion, a cordial but dignified frankness of manner, a refined hospitality in the inhabitants of the city, combine to make Baltimore one of the most agreeable residences in the United States.

BALTIMORE, LORD. See CALVEET, CECILIUS, and GEORGE.

BALTIMORE BIRD, or BALTIMORE ORIOLE (*Myiophanes Baltimore*, Linn.), belonging to the family of *sturnida*, and peculiar to the American continent, which it inhabits from Canada to Brazil. It is the most beautiful of our summer visitors, and is universally admired, both for the richness of its plumage and the sweetness of its song. It is also called "golden robin," "hang-bird," and "fire-bird." The adult male has the head, neck all round, fore part of the back, wings, and tail, black; quills, excepting the first, margined with white; the whole under parts, the lesser wing coverts, the posterior part of the back, bright orange, tinged with vermilion on the neck and breast; the tips of the 2 middle tail feathers, and the ends of the others, of a dull orange; bill and feet, light blue; iris, orange; length, $7\frac{1}{2}$ inches; extent of wings, 12 inches. This is the plumage of the 8d year, before which the colors are less bright, and more or less mixed with olive, brown, and white. The female is half an inch shorter, with the head, neck, and fore part of the back brownish black, mixed with dull yellow; hind part of the back, light brownish yellow, brightest on the rump; lower parts, duller than in the male. The orioles enter Louisiana, probably from Mexico, in early spring, and gradually make their way north, to return in autumn. Their motions are very lively and graceful. They are often seen, clinging by the feet, in search of insects, which form their principal food in the spring. Their song consists of from 4 to 10 loud, full, and mellow notes, very agreeable to the ear. Belonging to a family which usually lives in the tropics, where an inaccessible nest is necessary for protection against monkeys and serpents, the oriole retains the habit of suspending its nest, even in countries where these dangers do not exist. In the south the nest is made from the lightest moss, while in New England the softest and warmest materials, and the sunniest location, are selected. The nest is placed at the bottom of a very skillfully constructed network of strings and fibres, suspended, like a pouch, from the end of a branch, and shaded by overhanging leaves. The eggs are from 4 to 6 in number, about an inch long, of a pale brown color, spotted, dotted, and lined with dark brown. The period of incubation is 14 days. In Louisiana 2 broods are reared in a season. During migration their flight is high and straight, and mostly during the day. They are so little fearful of man that they build in the trees of a city, and over the planter's door, as readily as in the silent woods. They are often kept in cages, and may be fed on

figs, raisins, hard-boiled eggs, and insects. They are especially fond of hilly and well-watered districts, where many pairs will breed in the near neighborhood of each other.

BALTINGLASS, a town of Ireland, in the county of Wicklow, situated on the river Slaney, 37 miles S. S. W. of Dublin. The insurgents were defeated here in 1798 by the royal forces. Bleaching is carried on to a considerable extent. Pop. 1,928.

BALTSHIK, **BALTSCHIK**, **BALDSHIK**, or **BALD-SHIK**, a town of European Turkey, on the Black sea, 18 miles from Varna. In the neighborhood are some ruins of the ancient Tomi, the place of Ovid's exile.

BALU ISLAND, in the gulf of Martaban, Indian ocean, at the mouth of the Salwin or Than-Lyeng, a river which divides Siam and Burmah. It extends from lat. 16° 14' to 16° 31' N., being 17 miles long by 8 wide.

BALUE, **JEAN DE LA**, a French cardinal, prime minister of Louis XI., born at Verdun, in 1421, died at Ancona in 1491. He passed his youth in the village of Anglé, in Poitou, and having entered orders, attached himself to Juvenal degli Orsini, bishop of Poitiers, whose confidence he managed to obtain. Being appointed his executor, he defrauded the heirs of a large part of the inheritance, and then entering the service of the bishop of Angers he distinguished himself by making a most scandalous traffic in preferments. Yet he had the skill to conceal these abuses from his master, and he was presented to Louis XI. by Charles of Melun, the favorite of that prince. His subtle and intriguing spirit immediately gained the favor of the king, who made him his secretary and almoner, and gave to him the bishopric of Evreux. When Louis XI. was attacked by the formidable league of the "public right," it was chiefly the influence of Balue which made the populace of Paris remain faithful to him, in spite of the seductions and menaces of the confederate princes. In 1487, his efforts for the abolition of the "Pragmatic Sanction," which the parliaments and universities conspired together to uphold, gained for him from Rome the honor of a cardinal's hat. His passion for intrigue led him now to betray his royal master, and in various plots which he contrived between the king and the dukes of Berry and of Burgundy he was faithful to no one of the parties. His correspondence was at length intercepted, and he was arrested; yet, as he had foreseen, his official position prevented the execution of justice, since a cardinal could be judged only in the full consistory. Louis XI., therefore, that the criminal might not escape with impunity, confined him in an iron cage, from which he was released only, after 11 years of imprisonment, at the solicitations of Pope Sixtus IV. He immediately repaired to Rome, where he was kindly received, and acquired wealth and honors. He was even sent as legate from the pope to France in 1484, an office which he had the boldness to accept. Upon the death of Six-

tas, however, he fled from France, and in Italy he was made bishop successively of Albano and of Preneste, was provided with other rich benefices, and honored with the title of protector of the order of Malta.

BALUSTER, or **BALLISTER**, a kind of short column, sometimes in the form of an ancient bow, sometimes made after the model of Greek and Roman columns, employed in the construction of balustrades.

BALUSTRADE, a series of balusters surmounted by a rail, and placed as an ornament on large buildings, above the cornice, or as a protection to enclose bridges, stairs, balconies, altars, and the like.

BALUZE, **ETIENNE**, a French scholar and historian, born at Tulle, Dec. 24, 1680, died at Paris, July 28, 1718. He early acquired distinction by his varied and thorough knowledge, and was called to Paris by the celebrated Colbert, who commissioned him to make up his private library. In 1707 he was appointed to the superintendence of the royal college, and dismissed from that office in 1709, being suspected of having, in his *Histoire généalogique de la maison d'Auvergne*, designedly established, by documentary evidence, that the princes of Bouillon were descended from the ancient dukes of Guienne, counts of Auvergne, and therefore owed no allegiance to the king of France. Such an offence could not be forgiven; and Baluze, deprived of nearly all his income, was compelled to reside successively at Rouen, Blois, Tours, and Orleans, and not until after the conclusion of the peace of Utrecht was he permitted to return to Paris. He was of the most amiable temper, and his wit was equal to his cheerfulness.

BALZAC, **HONORÉ DE**, one of the most voluminous and celebrated of French novelists, born at Tours, May 20, 1799, died at Paris, Aug. 20, 1850. There is nothing remarkable in the history of his boyhood. On leaving school he was placed in a notary's office. He soon became discontented with this position and left it against the will of his father, to devote himself to literature. He had no facility in the art of composition; his style was unformed; his choice was not made either of his themes or manner of treatment. Before the age of 23, however, he had sent out to the world half a dozen novels and romances. These and twice as many more that followed in the next seven years, including attempts in almost all varieties of prose fiction, were essays of apprenticeship in the art of writing, and tentative experiments with his talents, whose value and proper application he was long in discovering and developing. They appeared under different assumed names, Heracée de St. Aubin, Lord R'hooon, De Veillegrat. Abounding in exaggerated defects of plot, incident, and style, such as in milder form often mar his riper works, they only give here and there a rare gleam of the excellent qualities that shine in his later writings. Some of them were thrown off under the pressure of poverty, and, mere custom-work, were written merely to

sell. Of their inferiority, although modesty was not a distinguishing characteristic of his nature, Balzac was always as conscious as his critics; nor would he even consent that they should bear his name. They have been mostly reprinted since his death under the general title of *Œuvres de jeunesse*. Meantime, though occasionally subject to painful depression of spirits, brought on by excess of labor, and lacking the encouragement of public applause, he did not swerve from his fixed purpose and confidence of winning literary eminence. As yet his pecuniary earnings were small; his means were often limited to the attainment of the necessities of life. But to a man of the taste and temperament of Balzac, luxuries are almost more important than necessities. His imagination was always as active in financial visions as in purer realms of fancy, and indeed its predilection in that respect may be frequently observed in his novels. Accordingly, in 1826 he associated with himself a printer of the name of Barbier, for the purpose of carrying on an enterprise, in which printing, publishing, and writing were combined—paper-making was to have been added—a great fortune was to have been the result. Wealth was desired, not merely as a means of gratifying this taste for art and material luxury, but as a means of relieving him from the pressure of want and giving leisure for the elaboration of his literary works. In spite of Balzac's laborious devotion to this business, the concern soon proved a lamentable failure, after having been long enough in operation to involve him in debts and obligations that harassed him constantly for years afterward, and from which in the end he relieved himself by the products of his pen. The first volume to which he signed his name was *Le dernier chouan*, published in 1829, a historical novel, written in La Vendée, amid the scenes so faithfully described in its pages. His next work, *Physiologie du mariage*, drew public attention to the peculiar originality and subtlety of the author's genius; *La peau de chagrin*, in 1831, increased the general admiration. From this time to the close of his life, he continued to produce in rapid succession that remarkable series of romances, novels, and tales, to which he gave the general title of *Comédie humaine*. The plan of this work was large and comprehensive to a degree that would have discouraged any man of less boldness and laborious perseverance than Balzac from attempting its execution. He proposed to himself in it nothing less than the complete delineation of every phase of modern French society. The fulfilment of such a design is, perhaps, beyond the strength of any possible individual intellect. But incomplete as he left it, and with all its manifold defects of execution, it remains a marvellous monument of genius and industry. Portions of it, considered as independent works, such as *Eugénie Grandet*, *César Birotteau*, *Le Lys dans la vallée*, *Le père Goriot*, *Balthazar*, *Clara*, *Les illusions perdues*, are masterpieces in

themselves. In all nearly 800 personages are brought before us. Some are rough-sketched with only an outline trait or two, others are drawn at full length, with all the accessories, with the extremest minuteness of detail; but each has as distinct an individuality as belongs to the personages of Shakespeare's dramas, or of the living world about us. Whether it be a finished portrait or a silhouette, the traits of one never run into or are repeated in another. The fop, the philosopher, the miser, the debauchee, the simple parish priest, the statesman, the petty shopkeeper, the artist, the almost angelic and the almost fiendish woman, are each in turn portrayed with equal vividness and truthfulness. Their actions are often extraordinary, but rarely extravagant, for they are the expression of passions developed with the utmost severity, but a profound and subtle severity of logic from natural premises. Balzac's peculiar merit lies in the analysis of emotions. In this respect he has, on the whole, no contemporaneous rival. Thackeray among the English is nearest to being his equal. His best works are distinguished for depth, acuteness, and boldness of observation, and a minute accuracy of external description and fullness of detail that often become wearisome, clog the movement of the story, and detract from the interest that should centre round the main figures. He is sometimes gross even to cynicism, which he mingles with traits of exquisite purity and delicacy, but the grossness and delicacy generally reside in his subjects. He rarely projects his own personality. It has been regretted that he had no high ideal. But that did not enter into his system of art. He aimed to present the world as he saw it. He advances no theory, pretends to no moral teaching. Absorbed in the practice of anatomy, he gives no lessons in therapeutics. Treating largely of female emotions, he found among women his warmest admirers. On occasion of the publication of his *Médecin de campagne* in 1835, he received a letter of laudatory appreciation from the countess de Hanska, which was the commencement of a long and intimate correspondence between that lady and her husband and himself. After her husband's death, Balzac went to Russia and married the countess in 1848. His health was already seriously impaired by the excess of his intellectual labors, and the copious use of coffee, which he drank in large quantities as an habitual stimulus. A few months after his return from Russia, in the height of his fame and literary activity, he died of hypertrophy of the heart.

BALZAC, JEAN LOUIS GUEZ DE, a pupil of Malherbe, and celebrated as a master of French prose, born at Angoulême, in 1594, died at Paris, Feb. 18, 1654. Having accompanied Cardinal La Valette as his secretary to Rome, his letters to his friends in France were greatly admired for their careful elegance and symmetry of style. They were not familiar letters but formal pieces of literature, composed to be circulated in manuscript in fashionable society.

On his return, Balzac was welcomed by the most influential persons at court, being held in particular esteem by the bishop of Luçon, who was soon to become the illustrious and all-powerful Cardinal Richelieu. The hotel Rambouillet, then the fashionable resort of nobles and wits, looked on him as one of its brightest ornaments; and the town as well as the court proclaimed him the most eloquent of French authors, and he was elected a member of the newly founded French academy by a unanimous vote. His glory, however, was not without trials; he was violently assailed by critics, and to avoid their annoyances he retired to the country, where he spent his time solely in answering the numerous letters incessantly pouring upon him, a task which was sufficient to occupy his whole time, as he was a very slow and laborious writer, and would not allow one letter to go out of his hands without having been submitted to thorough revision. He was a man of honor, integrity, and benevolence.

BAMBA, the capital of a province of the same name in Congo, S. W. Africa. It is a considerable town. In the province are mines of salt, silver, copper, lead, and iron.

BAMBARRA, an extensive district in the N. W. central part of Africa, which lies between the meridian of Greenwich and long. 5° W., lat. 9° to 16° N. The eastern part is a plain nearly level, subject to overflow by the rivers which intersect it, and which also turn a considerable portion of it into marshes. The western portion is hilly, and includes the eastern sides of the Kong mountains. The climate is sultry except in the hilly portions, where it is tolerably cool. The rainy season begins in the middle of June, and continues with violent winds and thunder, until November. The principal river is the Niger, which descends from the mountains near the western boundary. Numerous villages lie upon the banks of this stream, which divides into 2 branches at a town called Sego, and reunites at a place called Jennee. Bambarra produces a great variety of garden vegetables; the indigo plant, which grows spontaneously, the butter tree, which yields an ash-gray butter, an article of trade, and some singular fruits, one of which, the rhamnus lotus, is acid in taste and resembles gingerbread in color. Many districts have extensive forests and fine pastures. Horned cattle, sheep, goats, and horses of a fine breed, are numerous. Poultry abounds in every district. The rivers of Bambarra supply an abundance of fish, which, dried, is an article of considerable trade. The aborigines, who are the peasantry of the country, are barbarous. They devour dogs, cats, rats, mice, serpents, and lizards. The Moors have established themselves in the towns along the Joliba, exercise a great degree of authority with the petty sovereigns of the country, and with the Mandingoes and Zoolahs, two large negro tribes from the Kong mountains, who are Islamists. They compose the great part of the population of the towns, and

are mechanics and merchants; they are said to maintain schools, in which reading and writing are taught. The towns inhabited by these tribes and the Moors, are independent of the rule of the petty independent chiefs.—Bambarra has a very active trade. The Mandingoes export ivory. The Moors, who occupy the towns on the Niger, carry on extensive commerce through the Sahara with the countries along the Mediterranean. Beside gold, the principal articles of commerce are slaves, ivory, and coarse cotton cloth, which are exchanged for salt from the desert, tobacco, hardware, and other European merchandise.

BAMBAS, Νεοφύτος, a learned modern Greek and archimandrite of the Greek church, born upon the island of Chios, died at Athens, in February, 1855. He received a part of his education in Paris, and was engaged from 1815 to 1821 in directing the newly organized gymnasium of Chios. He was afterward for 3 years professor of philosophy in the academy at Corfu, then director of the gymnasium of Hermupolis, upon the island Syra, where he also taught philosophy and philology, till he was called to the professorship of philosophy in the university of Athens, founded in 1837. He was an accomplished scholar in various departments, and left many writings, chiefly upon rhetorical and philosophical subjects. Among them are a work on rhetoric, a grammar both of the ancient and modern Greek language, and treatises on ethics and on the elements of philosophy. Several of his works passed through many editions. Bambas was especially influential in the moral education of the young Greeks, and enjoyed a high distinction as an orator upon political and religious topics. As early as the war of Greek independence in 1821, his eloquence and patriotic enthusiasm had gained him great influence in shaping the course of public events.

BAMBERG, a city of Bavaria, circle of upper Franconia, on the banks of the Regnitz, about 3 miles N. of the confluence of that river and the Main, and where it separates into 4 branches which divide the town into 3 districts. These districts are connected by 7 bridges, one of which is a suspension bridge 350 feet long. Bamberg is well built, having spacious streets, pleasant gardens, and splendid public buildings. Among these are the cathedral, in the Byzantine style, founded in 1004, and which has, with other monuments, the tomb of the emperor Henry II. and his empress; the church of St. James, founded in 1073; St. Gargolph's church; St. Mary's church, a fine Gothic building of quadrangular form, and St. Martin, erected by the Jesuits in 1693, which has a library very rich in manuscripts. Bamberg has a lyceum in which full courses of philosophy and divinity are given by a large staff of professors, a normal school, a mechanics' institute, a drawing academy, a school for mechanics, a free school, and a royal library of 56,000 volumes; a museum of natural history and a cabinet of

natural and experimental philosophy. There are surgical, anatomical, and chemical schools, founded in 1789, by Bishop Ludwig, of Erthal, a society for "promoting genuine piety with brotherly love," and a society for the encouragement of the arts and sciences. Bamberg claims to have printed the first German book, namely, "Bonner's Fables," which bears the date of 1461. It has a gardeners' incorporation of 700 members, masters, workmen, and apprentices. It has annually 2 extensive fairs. Its principal manufactures are porcelain, gloves, jewelry, wax, tobacco, starch, marble wares. There are 60 breweries. The shipping on the canal, and the new railway communication with Nuremberg, contribute much to increase the commercial prosperity. Population, 19,812, of whom 400 are Jews.

BAMBOCCIO, a Dutch painter, better known by his real name, Peter de Laer, was born at Aeren, in 1618, died about the year 1675. He studied his art at Rome, where he enjoyed the patronage and esteem of many influential men. His peculiar excellence as a painter lay in depicting scenes of every day life. After residing 6 years at Rome, he returned to Holland. The name of Bamboccio was given him from his personal deformity.

BAMBOO (*bambusa arundinacea*), a genus of arborescent grasses found in Asia, and in the West Indies, but more extensively used in China than any other country. It has a hard woody texture where the plant has attained any considerable growth, with hollow jointed stems. These are externally coated with siliceous matter, and the plant sometimes secretes the same substance between the joints in lumps, when it is called *tabasheer*. The Chinese reckon an immense variety of it, the Chinese botanist observing that he could not name all the kinds, but would enumerate 3 of the principal varieties. The bamboo occupies an intermediate place between the strict proper grasses, and trees, from its size frequently appearing like a tree but displaying ramineous affinities in its internal structure. Like all grasses it is nourished from the pith, and starts from the ground at nearly the same diameter it bears in maturity. It usually grows to a height of 40 or 50 feet, and beyond that size is regarded as extraordinary. In diameter it varies from 1 to 8 inches, and in the distances between the joints from 4 to 6 inches in some varieties, and in others highly prized, from 4 to 10 feet. The leaves are small and oval without much diversity of form, but sometimes of a reddish and bluish hue. The color of the stems is generally yellow, but the Chinese possess secret arts of changing this to chestnut, black, &c.; the black bamboos are cultivated in the gardens of the rich like any other rare plants, and the emperor is said to have an officer connected with his palace whose sole duty it is to attend to the bamboos in the imperial gardens. The culture varies greatly according to the soil, the exposure, and the variety of the plant. It generally requires a sandy soil where

the roots will easily penetrate, and it is extensively grown along the shores of rivers, partly to give support to the banks, although the plant dies if its roots touch the water. It is always propagated by suckers, for it rarely blossoms and scarcely ever perfects its seeds. Planting generally takes place in the spring and autumn, and requires very slight care; 4 or 5 years elapse before a plantation is considered ready to cut, and for this the winter season is deemed the best, as the wood is then the hardest. The bamboo may indeed be styled the national plant of China, and the uses to which it is put by the natives are almost innumerable. The young and tender shoots are boiled and eaten, or preserved by the confectioners, and as sweetmeats are delicious. The roots serve many curious purposes, and among others for caricatures of men and animals. The slightest resemblance to any animal form is seized upon, and improved by carving, and even the fibres of the root are made to assume the shape of human heads and the manes and tails of dragons. The tubes are in constant use in many departments of human industry; not only are entire houses and boats built of them in some cases, but ornamental screen-work for interior decoration of dwellings; also the yards of the vessel to which the sails are fastened, and the tacking poles by which she is impelled in calm and shallow waters. The straightest of the tubes have been used for astronomical purposes, and cheap aqueducts in common use, formed by fitting the ends together for any required length, convey water. Sheds are made from the bamboo by softening it in water, and flattening the sections, and these when split finer are made into rain cloaks worn in wet weather, which bristling in all directions give their wearer the appearance of porcupines. Floats to tie on the backs of little children who live in the boats on rivers, as well as the poles by which strong coolies carry burdens, come alike from the plant. Water-wheels to irrigate the lands; fences to enclose them; coils of ropes; every imaginable article in furniture, chairs, tables, book-cases, boxes; hats, umbrellas, pipe sticks, fans, fan cases, cups, measures for grain; weapons, as shields, pikes and spear handles; the paper of which the book is made, and the sticks of the brushes with which the books are written, all are formed from bamboo. The pith of it is used for lampwicks, and exquisite carvings inlaid with gold and silver and far more elegant than ivory work are produced from the hard stems. It is employed for the pencils of the scholar, the brushes of the artist, and the ornaments of the delicate female; it descends at the nod of the judge on the back of the criminal, and so constantly too, that the word bambooning has become proverbial for flagellation, and it forms part of the torture apparatus of the executioner. In short, its use in China is so universal, that it serves its purposes in every phase of Chinese life, either of pleasure or pain. In the islands of the Indian ocean, the bamboo, like the bread-fruit tree and

the cocoanut also, enters largely into the industrial arts of all the various races. There is one interesting use of it, especially deserving of mention. Both the Battaks of Sumatra, that remarkable race of cannibals who have invented a phonetic alphabet, and have a literature, which compares favorably with that of other Malay families, and also the Redjanga, another Sumatran tribe, who have a written character of their own, use the bamboo for writing as we use paper. They employ small polished joints, about one inch in diameter, and on these they write from left to right, as we do; and beginning at the top of the bamboo, descend spirally to the bottom. Writings of importance, letters from chieftains, are enclosed in a larger bamboo cylinder, and sealed at both ends with a preparation of dammar gum. In Burmah the bamboo is so extensively used in the construction of houses, that large cities, such as Rangoon and Prome, are composed almost entirely of bamboos. These houses are lashed together, not nailed, and easily struck and removed, like tents.

BAMBOOK, or **BAMBOUK**, also **BAMBAUK**, a country in the interior of Africa, between lat. $13^{\circ} 30'$ and $14^{\circ} 30' N.$, and long. $10^{\circ} 30' 15'$ and $12^{\circ} 15' W.$ It is about 140 miles in length, and 90 in breadth. It is mountainous and rugged, though the greatest elevation of its surface nowhere exceeds 600 feet. The higher region is barren and naked, but the lower supports the utmost exuberance of vegetation. The baobab, the tamarind, and palm trees, reach the greatest dimensions. The soil is so fertile as to produce, almost without culture, maize, millet, cotton, melons, and a great variety of leguminous plants. Rice is yielded in the greatest abundance by the low lands, which are subject to overflow. Large herds of wild cows and oxen roam over the plains, the rich pasturage of which furnishes them an abundance of feed. Lions and elephants are numerous. Bambook has rich gold mines. The principal mine is described as an isolated hill, about 300 feet high, and in circumference 3,000 feet, the soil of which contains gold in the shape of lumps, grains, or spangles. This gold is exchanged for salt. Bambook is thickly populated. Its inhabitants are barbarous. It was once invaded by the Portuguese. The ruins of their forts and houses are still to be seen in the country.

BAMBOORA, a decayed city of Sindh, the ruins of which bear traces of past importance. It lies W. of Tatta, and is supposed to have been identical with Braminabad, the capital of a prosperous Hindoo kingdom in the 10th century.

BAMBOROUGH, or **BAMBURGH**, an ancient town and castle on the coast of Northumberland, 16 miles from Berwick, England; pop. in 1851, 466. The town was founded about 554. The castle stands on a perpendicular rock, 150 feet high, near the sea, and is accessible only on the S. E. side. It had been a ruin for some hundreds of years, when, in 1721, the manor containing it

was bequeathed for charitable purposes by Lord Orewa, bishop of Durham. Archdeacon Sharp, one of the trustees, caused the walls to be repaired and made habitable. Signals to warn vessels off the dangerous Fern Islands in the vicinity, are now displayed there; and a life-boat station and asylum for the shipwrecked, are now maintained there. There is also a dispensary within the castle; a library free to persons living within 20 miles; and a girls' school, where 80 pupils, from 9 to 15 years old, are boarded, clothed, and educated. The funds of the charity, which yield an income of some \$40,000, are also applied to support a boys' school, to aid in building churches, to educate young men at the universities, and for other benevolent purposes.

BAMIAN, **BAMKEAN**, **BAMIGAN**, or **BACHMAN**, a valley, pass, and ancient town of Afghanistan, about 52 miles N. W. of Cabool. The valley lies between the Hindoo Koosh and the Paropamisian mountains, and is important as the only route practicable for artillery across the Himalaya chain into Independent Turkistan. It is about 1 mile wide, bounded on each side by almost perpendicular steepes, and strewn throughout its whole extent with the most curious and interesting antiquities. It was the site of the city of Gulgula, destroyed by the Mongols under Genghis Khan, in 1291, and in addition to the ruins of this place contains numerous relics of ancient times, the origin of which is lost in obscurity. Among the latter are gigantic figures cut in the rock, and supposed to be idols, 2 of which are upward of 180 feet in height. There are vast caverns excavated in the rocks, and so numerous as to extend in a series for upward of 8 miles. The town of Bamian occupies the sides of an isolated hill in the valley. Greatest elevation of the pass, 8,496 feet.

BAMPTON, or **BAMPTON IN THE BRW**, Oxfordshire, an English market town, situated on a stream which flows into the Thames, 71 miles W. N. W. from London. It is a place of great antiquity. It has a very ancient church edifice, which was remodelled in the reign of Edward II. It has 2 pariah libraries, 2 endowed schools, and 2 fairs annually. It is the birthplace of Philips, the author of the "Splendid Shilling." Pop. of the parish, 1,780.

BAMPTON LECTURE. In 1780 was commenced a series of lectures or sermons preached before the university of Oxford, according to the will and endowment of the Rev. John Bampton, resident canon of the cathedral of Salisbury. The income of the endowment is only £120 per annum. The Bampton lectures consist of 8 annual discourses, forever, on one or more of the following themes: 1. The divine authority of the Scriptures. 2. Divinity of Christ and of the Holy Ghost. 3. The article of the Christian faith as comprehended in the Apostles' and the Nicene Creed. 4. The authority of the writings of the primitive fathers as to the faith and practice of the primitive church.

5. An essay to confirm the Christian faith, and confute all heretics and schismatics. One person is to be chosen annually, who is to deliver the annual course between the commencement of the last month in Lent term and the end of the third week in Act term. The lecturer is to be chosen by the heads of the colleges; he must have taken the degree of M. A. either from Oxford or Cambridge; is never to be chosen a second time, and the lectures are to be delivered in St. Mary's church. Within 2 months after the delivery of the lectures, 80 copies of them are to be printed for private circulation to the universities, the mayor of Oxford, and the Bodleian library. They are, however, generally published. The lecturers embrace the names of some eminent English divines.

BAN, or BANUS (Slavonic *ban*, a lord), the title of the governor of certain military districts in the eastern part of Hungary, corresponding to the German title of margrave. The ban is nominated by the king, renders an oath to the diet, and formerly had very extensive powers, exercising an almost absolute authority in the political, judicial, and military affairs of his district. The progress of Turkish conquest after the unfortunate battle of Mohacs in the 16th century extinguished the most of the banats, and there remains now only the banat of Temesvar, the ban of which is the third great dignitary of the Hungarian kingdom, and has the title of the ban of Croatia.

BAN and ARRIÈRE BAN, of France, the entire feudal levy of the realm, raised by public proclamation, ban, of the king, denouncing penalties against all who should fail to appear. The ban comprised all the great vassals, holding of the king for homage; the arrière ban included all the vassals, or tenants, of the second class. The whole ban and arrière ban, therefore, constituted the entire military force of the crown of France during the feudal ages, and prior to the establishment of standing armies. It could only be called out by the king in person, and usually only when he was himself in the field, although the leading of it might be, and often was, even when the monarch was himself in arms, attributed to the constable, or some other high officer of France. The calling out of the ban and arrière ban usually implied the invasion of the soil of France; the revolt of some great feudatories; or, in some serious way, the supreme peril of the crown and state. It was attended with solemn ceremonies, and on the assemblage of the powers, by the displaying of the *oriflamme*, or sacred banner of the monarchy, green, langued with tongues of gold, emblematical of the fiery tongues of the Pentecost, by the count de Harcourt, who was the hereditary holder of that office.

BANANA, the *musa* of botanists, a herbaceous plant belonging to the natural order of the *musaceae*. It is now abundant in the tropical regions of both hemispheres, but is thought to have been introduced into America from the East Indies. The trunk of the banana tree

rises from 15 to 20 feet in height, and is composed of the extended bases of petioles sheathed within each other. This trunk is terminated by a tuft of large undivided leaves from 6 to 10 feet in length, and about 1 foot in breadth, from the midst of which proceeds the peduncle, which bears a large spike of sessile flowers. The fruit has nearly the form of a cucumber, becomes yellow when near maturity, is soft, pulpy, and of delicious taste, and is produced in great abundance, from 80 to 100 bananas being often found upon a single stock. There are 2 species, the *musa sapientum* and the *musa paradisiaca*, which differ but slightly, the fruit of the latter being a little shorter, straighter, rounder, and of more luscious taste. The name of this species is derived from the oriental Christians, who fancied it to be the tree of forbidden fruit in the garden of Eden; and travellers affirm that the banana tree alone would have been sufficient for all the necessities of the first man. As an article of diet, its place could not be supplied in the warm climates, where it grows almost spontaneously, and propagates itself by successive shoots, which start at various times from its roots, so that crops are produced at every season. It is at once agreeable and nutritious, and is the principal food of many families, both in the East and West Indies. It is commonly eaten raw, but is also baked into a kind of bread, and fried in fritters. No other plant produces the same amount of nutriment, from the same space of ground, as the banana. The tops of the young plants are also eaten as a delicate vegetable, and the fermented juice of the trunks becomes an agreeable wine. The large leaves are used for thatching, basket-making, parasols, and table-covers, and are made into vases to hold water. Horses and other domestic animals are also supported upon the fruit.

BANANA ISLANDS, a group of 8 small islands on the western coast of Africa, near the south-western extremity of Sierra Leone, off Cape Shilling. They take their name from the largest, which is about 4 miles long and 1 broad, lat. 8° 8' N., long. 18° 12' W. They are high, fertile, and inhabited. The equinox tides rise here from 8 to 10 feet. They are interesting from their connection with the early history and seafaring days of the Rev. John Newton, the friend and spiritual adviser of the poet Cowper.

BANANAL, an island in the river Araguay, province of Matto-Grosso, Brazil, which is also known as Santa Anna. It is 200 miles long by 85 broad, and covered with a dense forest. In its centre there is said to be a navigable lake 90 miles long by 30 wide. It is extremely fertile, and derives its title from the great increase in the banana trees which were planted there in 1778 by the discoverers.

BANAT, a large Austrian province, comprising the 8 counties of Temesvar, Torontal, and Krasso, and 2 military districts, the German and Wallacho-Ilyrian; pop. about 1,000,000.

It is 120 miles long from E. to W., and 98 miles broad from N. to S., at the extremes. The rivers Danube, Theiss, and Maros, bound it on all sides save the E., where it becomes hilly. The surface, with this exception, is level, and on the W. somewhat swampy. It is also watered by the rivers Temea, Nera, Karasch, and the Alt Bega. The Neu Bega, a canal 90 miles long, is entirely within the province. The Banat is one of the most fruitful districts in Europe, its wheat having long been celebrated for quantity and excellence, while maize gives 24, 48, and as high as 60 fold increase. Good cotton is grown, vineyards abound, and much attention is paid to the rearing of the silkworm. The mineral resources of the province have been comparatively disregarded; but an extensive coal-field has been recently discovered.

BANBURY, a market and borough town in Oxfordshire, England, on the river Cherwell, 12 miles N. E. of Chipping Norton, and 17 miles W. of Wolverton, on the N. W. railway. Banbury tarts and Banbury cheese are famous all over England. The town has a population of 8,715, and sends one member to parliament. It is neat and clean, and has a considerable carrying business by the Oxford and Birmingham canal, as well as a large market for agricultural produce. The large church is an imitation of St. Paul's cathedral. Among its educational establishments is a charity school.

BANCA (Malay, *bangka muruk*, hill of the enemy), a considerable island of the Malay archipelago, bounded N. and E. by the China sea, S. by the Java sea, and on the W. separated from Sumatra by the straits of Banca, 120 miles long, one of the chief highways of European commerce in the eastern seas; area, 4,281 sq. m.; pop. in 1858, 43,000.—This island, chiefly noted for its tin, forms, with the neighboring island of Billiton, the southern extremity of the great Malayan tin district, of which the northern limit is Tenasserim, on the Malay peninsula, extending over 16° latitude and 10° of longitude. As we trace this tin field, beginning at its northern extremity, in lat. 12° 50' N., we find the tin ore poor in quality and difficult to obtain—then increasing in richness and abundance as we proceed down the straits of Malacca, and along the eastern coast of Sumatra, until we find the richest and most abundant ore in its southern extremity, Banca and the neighboring island of Billiton. All the ore worked in Banca has been found in the alluvion or detritus of ancient mountains—what is called in mining language “stream works,”—obtained, in fact, by washing the soil with the rudest of rocker machines, in the same manner as for the most part gold was obtained during the early discoveries in California and Australia. No tin ore has ever been obtained by mining the rock containing veins of it, although it has been traced to them; but, no doubt, should such skill, enterprise, and machinery, as are now employed in crushing and smelting the quartz rocks of California, be employed in Banca, its

mountains may be made to yield tenfold the present abundance of its alluvial plains. The greater part of the tin district which has not been explored, is covered with a close tangled jungle and forest trees of immense growth, so that tin may reasonably be expected to be found in many new situations. The digging, washing, and smelting the alluvial tin ore, is entirely in the hands of the Chinese population of the island, who receive advances from the Dutch government, which exercises a monopoly of the produce. The tin, smelted into the state of commerce at the mines, is delivered into the government stores at Minto, for 15 *recepian* the picul, or about \$4 per cwt. In 1856, the entire product of the Banca mines was 5,736 tons, nearly $\frac{1}{2}$ more than the yield of the Cornish mines, and being all grain tin, superior to the latter in value. This product of the Banca mines for 1856, sold at Batavia for 4,570,741 florins; and, deducting the amount paid to the miners, cost of European superintendence at the mines and furnaces, transport of the metal to Java, where it is sold, public establishments there for storing and selling, including all the civil, military, and naval expenses of the island, kept up chiefly if not wholly on account of its tin—left a balance to the government of nearly 2,000,000 florins, or \$920,000, which shows what Banca is worth to the Dutch.—Of the population about $\frac{1}{2}$ are the *orang gusan*, mountain men; a peculiar wild race, whom the Dutch have not been able to control or civilize to any extent. They live in separate families, and do not congregate in villages; they cultivate a little rice, but subsist chiefly upon the spontaneous products of the forest and the meat of wild hogs, which are found in great numbers upon the island. In race, language, and state of society, they are essentially the same as the *orang benawa*, the aborigines of the Malay peninsula. On the coast are found a people precisely similar to the Bajans or sea gypsies in habits, though differing from them in language. They are called Sikas by the Malays. These dwell in boats, having no other habitation, and live by fishing, and occasionally by a little piracy. They are the same race that have been so often found lurking with their prahs among the small islands in Gaspar straits, from whence they have issued to plunder and scotch small, unarmed, or stranded vessels. The Chinese compose the other half of the population. On account of their alleged turbulent character, these are subjected to very severe restrictions by the government. None are allowed to remain upon the island beyond a limited number of years, and those who return home or go to other parts of the archipelago, have their places continually supplied by fresh recruits from China. The Chinese fleet arrives with the N. W. monsoon, and sometimes brings 2,000 and 3,000 coolies at a time. They are directly governed by their own *kapallai*, or captains, as in other parts of the archipelago, who have their appointment from the government.—Through

the whole island there runs a chain of mountains, the highest peak of which, that of Maras, at the head of the bay of Klabat, has an elevation of 2,800 feet. Manopim Hill, which is a noted landmark for navigators, is 1,600 feet high. The island has no lakes, but many morasses, and numerous small rivers, tangled with mangroves and rattans, and not navigable except for native boats.—The mountain chain of Banca has the same direction as that of the Malay peninsula, and of the plutonic part of Sumatra, running from N. W. to S. E., and it has the same geological formation. The main component of the mountains is granite, containing tin, gold, and iron. Next to the granite, and in situations of less elevation, there occurs an extensive formation of red iron stone, the laterite of geologists, and in the lowest lands an alluvial formation, intermixed with sandstone and breccias, among which occur the washings of tin and gold. The soil of Banca must be considered as decidedly sterile. It consists of a layer of mould, from 1½ to 2 feet deep, generally lying over the iron stone or laterite, already described. Beside tin mining, the only rural industry of the island consists in small patches of rice, and in raising a few fruits and vegetables.—The plants of Banca are, with few exceptions, the same as those of that part of Sumatra in its neighborhood. The whole island, even to a greater degree than usual, is covered with forests, the marshy parts of it being impenetrable from tangled underwood. The most valuable products of the forest for trade are eaglewood, ebony, and beeswax; the latter is obtained very plentifully. Of animals, there are 2 species of wild hog, the same as those of Java, which are very numerous; a stag, the pigmy deer, or *kanchool*, and the Malayan bear. The elephant, the rhinoceros, and tapir, of Sumatra, do not exist; and the largest rapacious quadruped is the *musang*, a species of pole cat. The birds are for the most part the same as those of Sumatra. The pigeon family is remarkable for numbers and variety, 80 species having been reckoned. Of reptiles, the alligators are numerous and dangerous, being found on the coasts, and in the rivers and marshes. Esculent fish and molluscs are abundant and of good quality. The market at Minto is well supplied with *ikan guramee*, a fish much resembling salmon, and with good oysters and shrimps.—Banca has no trade worth naming, beside its export of tin. The only place of trade is the town of Minto, situated on the shore of the safest roadstead on the straits of Banca, in lat. 2° S., long. 105° 5' E., containing in 1856, 7,000 inhabitants, chiefly Chinese. This is the seat of the Dutch resident, or governor. There is a small garrison of Dutch troops, but altogether there are not more than 200 Europeans upon the island.—On account of its sterility, this island attracted no attention till the discovery of its tin; which was made very much in the same way that silver was first found in Peru. Some of the inhabitants in

burning the forest, in their rude culture of rice, found that some superficial tin ore had been smelted in the process, and ore being sought for in the neighborhood, was found in abundance. This happened in 1709, and in 1711 the discovery was made known at Batavia to the Dutch. It is remarked, as a signal proof of the ignorance of the Malayan nations, that the Javanese, the most advanced of them, should have been, after 830 years as sovereigns of Palembang in Sumatra, masters of Banca, without being aware that it had rich mines of a useful metal well known to them. The tin of Banca was no sooner discovered than the sultan of Palembang endeavored to establish a monopoly of it; and no sooner was it known to the Dutch that he had done so, than they sent an expedition to force a treaty upon him, securing to themselves the right of preemption at a very small price. This state of things continued for a whole century, until the conquest of the Dutch possessions by the English, in 1811, when Badr-Oodin the cruel and energetic sultan of Palembang, hoping to gratify the English, put the whole of the Dutch at Palembang and Banca to death. The return for this uncalled for act of friendship was the invasion of Palembang by the English under Gillespie, the defeat of the sultan, his dethronement, and the acquisition of Banca as a cession from his successor, in 1812. The island continued in the hands of the British till 1816, when along with the rest of their possessions in the archipelago, it was restored to the Dutch. These, in 1818, restored the old sultan Badr-Oodin, whose treachery brought on a bloody war of 2 years, which ended in 1821 by the conquest of Palembang, which, with Banca, has since continued in the possession of the government of Netherlands India.

BANCAAL DES ISSARTS, JEAN HENRI, a French revolutionist, born at St. Martin-de-Londres, Nov. 2, 1750, died at Clermont-Ferrand in June, 1826, was a member of the convention, but opposed the extreme measures of the Mountain. Through the treachery of Dumouriez, to whom he was sent on a mission by the convention, he fell into the hands of the Austrians, who kept him and many other deputies in prison until 1795, when they were exchanged against the duchess of Angoulême. He afterward proposed the repeal of the law authorizing divorce for incompatibility of temper. He wrote a work entitled, the "New Social System founded on Religion."

BANCALIS (Malay name of a plant, *nauclea orientalis*), an island of the Malay archipelago, on the N. E. coast of Sumatra, off the mouth of Siak river, area 410 sq. m.; population, supposed to be not more than 2,000. It belongs to the sultanate of Siak, in Sumatra; and is entirely covered with forest. Its inhabitants are very poor, subsisting chiefly on rice and fish, which abound in the neighboring waters. Coal has been recently found in this island, and on the neighboring main land.

BANCHORY DEVENICK, a maritime parish in Aberdeen and Kincardineshire, Scotland, on the Dee, 5 miles S. W. of the town of Aberdeen. It has the remains of a Druidic temple, several large causeways, and a suspension bridge over the Dee 305 feet long, for foot passengers.

BANCORA, a town of Hindostan, in the presidency of Bengal, 98 miles W. N. W. from Calcutta, on the great road to Benares. It is the capital of a district of the same name, which contains an area of 1,476 sq. m., and a population of 480,000. This district contains valuable collieries, lying as it does in the range of the great carboniferous and iron ore track of Bengal, and communicates with Calcutta by a branch of the East Indian railway. The town is of recent origin, and built at an elevation of 215 feet above sea level.

BANCROFT, a northern county of Iowa, bordering on Minnesota, drained by Mankato river and its branches, and comprising an area of about 450 square miles. Several small lakes touch its northern boundary. It has recently been organized, and is not included in the state census of 1856.

BANCROFT, AARON, a Congregational clergyman of Massachusetts, and author of a life of Washington, born at Reading, Nov. 10, 1755, died at Worcester, Aug. 19, 1839. His father, Samuel Bancroft, possessed eminent natural ability, filled many public stations with distinction, and is described as "a man of great benevolence, compassion, and sympathy; judicious in his thoughts and sentiments, and having the gift of utterance in an eminent degree." The son, who inherited his father's gifts, was strictly educated in the Calvinistic system, and in his childhood heard only orthodox preaching; but by "the throes of his own youthful mind" and subsequent study, he was led to a belief more nearly resembling that of Arminius, Grotius, and Locke. When the American revolution came on, young as he was, he often took a place in a minute company; and though then a collegian, he shouldered a musket as a volunteer on the day of Lexington and again of Bunker's Hill. After 4 years at Harvard college, and 1 or 2 years' study of theology, he began to preach. Of the next 5 years of his life, 3 were passed in Nova Scotia, principally in Yarmouth, Horton, Cornwallis, and Annapolis, among a mixed and unlettered population, where he was thrown on the resources of his own mind without libraries or learned divines; and this virtual solitude developed his talent for discrimination and confirmed the independence of his clear and vigorous intellect. In 1785 he was settled permanently in Worcester as a minister. The tone of his mind was courageous and healthful. He was fond of philosophical studies, and was an acute logician. The English theological writers whom he read most were Locke, Tillotson, Samuel Clarke, Whitby, Bishop Law, Bishop Butler, and Price. With Priestley and Belsham he had no affinity. Beside occasional sermons, chiefly in defence of religious liberty, he printed in

1800 a well-written eulogy on Washington; and in 1807 a life of the great "soldier and statesman," in one octavo volume. The life which is written in a neat and chaste style and with an affectionate interest that always guided its author right, is strictly a biography, not a history; faithful in its narrative and candid in its judgments. It was reprinted in England in 1808; gained notice in Germany; and has been very widely circulated in the United States. Whoever reads it will get a just conception of Washington. In 1823 Dr. B. published a volume of doctrinal sermons, directed chiefly against the dogma of unconditional election. But what most signalized him was the genuine liberality which was a part of his nature, and his constant, fearless, and unqualified advocacy of the right of free inquiry and of private judgment. At the time in his vicinity he stood alone; but his influence there is to this day perceptible. His protest against Calvinism long preceded the rise of the Unitarians, and, though in the latter part of his life he was president of the American Unitarian association, he would never separate himself from the name or the system of Congregationalism. He held firmly that reason and true religion must agree; and that what is contrary to reason is false, what conforms to reason is true. The Bible was his standard. He was tolerant of error, and believed that even out of error truth would rise. Old age did not change this habit of his mind. He was cheerful, benevolent, and active to the last, as if ready to begin life anew. He was a doctor of divinity of Harvard college, and was a member, and in many cases the presiding officer of various literary, religious, and benevolent societies.

BANCROFT, EDWARD, an English naturalist, and member of the royal college of physicians in London, died in 1831. He resided long in America, where he was intimately associated with Franklin and Priestley. He wrote an essay on the natural history of Guiana, which was published in London in 1769, and contained much information at that time new, particularly an account of the *secoia*, or vegetable substance employed by the Indians to poison their arrows. He also published a work entitled "Experimental Researches concerning permanent colors, and the best means of procuring them," which was translated into the German language.

BANCROFT, GEORGE, an American historian and statesman, born at Worcester, Mass., Oct. 3, 1800. He was the son of a Massachusetts clergyman, the Rev. Aaron Bancroft, and the lessons which he received at home prompted the formation of a grave, humane, and catholic character. He pursued his preparatory studies at Exeter, N. H., and in 1818 entered Harvard college, where he gave special attention to metaphysics and morals, and acquired a strong and lasting predilection for the writings of Plato. He graduated in 1817, and with an extensive scheme of study, embracing hardly less than the whole circle of sacred and profane

ancient and modern literature, started for the universities of Germany. At Göttingen, where he remained for 2 years, he studied German literature under Benecke, French and Italian literature under Artaud and Bunsen, the oriental languages and the interpretation of the Scriptures under Eichhorn, ecclesiastical and the more recent ancient history under Planck and Heeren, natural history under Blumenbach, and especially the antiquities and literature of Greece and Rome under Dissen, an enthusiastic admirer of Plato, with whom he went through a thorough course of Greek philosophy, and read in the Greek nearly every one of the writings of Plato. At this time he selected history as his special branch, giving as one of his reasons the desire to see if facts would not clear up theories and assist in getting out the true one. Having received at Göttingen in 1820 the degree of doctor of philosophy, he remained to Berlin, where he heard the lectures of Wolf, the renowned editor of Homer, of Schleiermacher, and of Hegel. He was a herald to these professors of their fame in the new world, and his ardor and accomplishments gained for him a welcome reception. He was at home in the houses of Schleiermacher, Wilhelm von Humboldt, the great lawyer Savigny, Appenberg, the future historian of England, Arnheim von Ense, and other famed literary persons. He availed himself of his stay in Berlin to observe the administration of the Prussian government in many of its departments. In the spring of 1821 he began a journey through Germany and other parts of Europe. He had already, in a Göttingen vacation, seen Dresden, its galleries and principal men, and had made the acquaintance of Goethe at Jena. At Heidelberg he was several hours every day with the historian Schlosser, discussing history and poetry, especially Dante, and read with him several Greek tragedies. In Paris he became acquainted with Cousin, and Alexander von Humboldt, and particularly with Benjamin Constant, passed a month in England, and returned to the continent to travel on foot through Switzerland. He spent 8 months in Italy, formed an acquaintance with Manzoni at Milan, and a friendship for life with Chevalier Bunsen at Rome, where he also knew Niebuhr. His time in Italy was also thoroughly employed in studying the ecclesiastical government, and in seeing pictures, churches, statues, and ruins. He returned to America in 1822, and accepted for one year the office of tutor of Greek in Harvard university. During his year of tutorship, he preached several sermons, yet he seems not long to have entertained the thought of entering the clerical profession. In 1823, in conjunction with Dr. Joseph G. Cogswell, he established the Round Hill school at Northampton, in which some of the most learned young men of Germany were employed as teachers. The standard as preparatory school was too high for the standard of collegiate instruction in this country, yet much was done by this institution toward in-

roducing a better system of study and of class-books. He published at this time his translation of Heeren's "Politics of Ancient Greece," and a small volume of poems bore witness to the enthusiasm with which he observed the scenery of Switzerland and the ruins of ancient art in Italy. He was also busily meditating and collecting materials for a history of the United States. In 1826 he took the first step in his political career by delivering before the citizens of Northampton, at their request, an oration, in which he avowed his principles to be for universal suffrage and uncompromising democracy. He was elected in 1830, without his knowledge, to the general court of Massachusetts, but refused to take his seat, and the year after he declined a nomination, though certain to have been elected, for the senate of his state. In 1834 appeared the first volume of his "History of the United States," the mature fruit of a long-cherished purpose. In 1835 he drafted an address to the people of Massachusetts, at the request of the young men's democratic convention, and was for a time very actively engaged in speaking at public meetings, and in drawing up political resolutions and addresses. He removed in this year to Springfield, where he resided 3 years, and completed the 2d volume of his history. In 1838 he was appointed by President Van Buren collector of Boston, and the intelligence and vigor with which he performed the labors of this office won the applause of his political opponents. Duties were at that time paid by bonds, and unpaid bonds had accumulated to a large amount as debts to the government. Yet not a single bond taken during the term of Mr. Bancroft was unpaid at the time when he resigned the office, and his collections amounted to several millions. He was at this period a frequent orator in political assemblies, was pursuing his studies even more zealously than ever before, and was particularly interested in the philosophical movement begun by some of the most cultivated persons of Boston, and subsequently known as transcendentalism. In 1840 the 3d volume of his history was published, upon which he had diligently labored amid many other engagements. In 1844 he was nominated by the democratic party as their candidate for governor of Massachusetts, and though not elected, received more votes than any candidate has received either before or since on the purely democratic ticket. During the long and violent canvass he was in the city of New York, studying, often for 12 hours in the day, manuscripts and documents illustrative of our early history. After the accession of Mr. Polk to the presidency, in 1845, Mr. Bancroft entered the cabinet as secretary of the navy. He signalized his administration of this office by the establishment of the naval school at Annapolis. The improvement of education in the navy had been desired by more than one of his predecessors, but little had been done to promote it, and Mr. Bancroft was the first to

design a naval school for the naval service, corresponding to the military school at West Point. In selecting a place for this institution, the remote south offered none that was convenient and salubrious. As the military academy was at the north, a naval school at the north also would have excited jealousy. He therefore decided for the waters of the Chesapeake. At his request the secretary of war, with the approval of the president, made over to the navy department the military fort and grounds at Annapolis. The garrison was marched out, the naval school marched in; the arrangements were made with the most rigid economy, but liberally and sufficiently, with the best of discipline and good teachers; and every midshipman on shore was ordered there. The benefits of this system to the navy were: first, its effect upon the morals of the young naval officers, since they were kept constantly at school and under supervision when on shore, except for short visits to their parents or friends; secondly, it introduced into the navy a fine spirit of scholarship, and gave promise that the officers would make high attainments in science. The institution was devised and completely set at work by Mr. Bancroft alone, who received for the purpose all the appropriations for which he asked. He was also influential in obtaining additional appropriations for the Washington observatory, and in introducing some new professors of great merit into the corps of instructors. A reform in the system of promotion in the naval service was desired by many, and he planned a method by which promotion should depend not on age alone, but also on experience and capacity. His scheme, however, was never fully developed or applied. While secretary of the navy Mr. Bancroft gave the order to take possession of California, and it was carried into effect before he left the naval department. During his term of office he also acted as secretary of war *pro tem.* for a month, and gave the order to Gen. Taylor to march into Texas, which was the first occupation of Texas by the United States. In 1846, Mr. Bancroft exchanged his position in the cabinet for the office of minister plenipotentiary to Great Britain. The experience which he had had as collector pointed out to him the inconvenience from which American navigation suffered by the British restrictive laws of navigation. The American laws were at that time much the more liberal; and he urged the subject on the attention of the British ministry till he had the satisfaction of seeing the British system not only equal ours in liberality, but also go beyond it. The disturbances in Ireland occurred while he was in England, and some Irish Americans having gone over to Ireland, were arrested as favorers of the insurrection. The circumstances of their arrest justified his interference, and he did not let the matter rest till every one of them was set free, claiming for naturalized foreigners the plenary rights of American citizenship, always, and in all places. During his residence in Eng-

land he was in the most friendly relations with the ministry and the men of letters of that country. In 1849 the university of Oxford made him a doctor of civil law, and he had before been chosen correspondent of the royal academy of Berlin, and also of the French institute. He used the opportunity of his residence in Europe to perfect his collections on American history. He made several visits to Paris, to study the archives and libraries of that city, being aided in his researches by Guizot, Mignet, Lamartine, and De Tocqueville. In England, the ministry opened to him the records of the state paper office, embracing a vast array of military and civil correspondence; and also the records of the treasury, with its series of minutes and letter-books. In the British museum, also, and in the private collections of many noble families, he found valuable and interesting manuscripts. He returned to the United States in 1849, and took up his residence in New York, and began to prepare for the press the 4th and 5th volumes of his history, which were published in 1853. The aplause which had followed the publication of his preceding volumes was heightened upon the appearance of the new and long-expected volumes. In 1854 the 6th volume was issued, and the 7th, it is understood, will appear early in 1858. Mr. Bancroft is eminently a philosophical historian. He brings the wealth of a most varied learning in systems of thought, and in the political and moral history of mankind, to illustrate the early experiences of his country. He catalogues events in a manner which shows the procession of ideas, and not only describes popular movements picturesquely, but also analyzes them and reveals their spiritual significance. The early population of this country having been largely formed by the emigration from the various states of Europe of men who brought with them the ideas and habits in which they had been educated, the historian has much to do with the course of European history, and the chapters in which he elucidates the great political and religious movements of the old world are valuable contributions to the philosophy of modern history. The work of Mr. Bancroft may be considered as a copious philosophical treatise, tracing the growth of the idea of liberty in a country designed by Providence for its development. It is written in a style marked by singular elaborateness, compactness, and scholarly grace, and is esteemed one of the noblest monuments of American literature. It has been several times republished abroad and translated into foreign languages, the German version having already passed through 4 editions. Mr. Bancroft has published various public addresses, and has collected a volume of "Miscellanies," chiefly upon historical and philosophical topics, including a copious survey of German literature, selected from his numerous contributions to different reviews. In this volume is contained the masterly discourse upon "The Necessity

the Reality, and the Promise of the Progress of the Human Race," which he delivered before the New York historical society, at the celebration of its 50th anniversary. He is now vigorously prosecuting his historical labor, passing the winter in the city of New York and the summer by the sea-side, at Newport, and occasionally lending the weight of his name and ability to a political cause by presiding and speaking at a public meeting.

BANCROFT, RICHARD, an English prelate, and archbishop of Canterbury in the reign of James I., born at Farnworth, in Sept. 1544, died at Lambeth, Nov. 2, 1610. He was educated at Cambridge, taking his bachelor's degree in 1567, and his master's degree 8 years later, and, having entered orders, became chaplain to the bishop of Ely, who, in 1575, gave to him the rectory of Feversham. In 1584, he was presented to the rectory of St. Andrew's, in Holborn, received the degree of doctor of divinity the next year, and, after having various prebends given to him, became one of the chaplains of Whitgift, archbishop of Canterbury, through whose influence, in 1597, he was made bishop of London. The feebleness of the archbishop gave to Bancroft, from this time, the real archiepiscopal power. He took a prominent part in the disputation before King James, at Hampton court, between the heads of the church of England and of the Presbyterian party, and when Archbishop Whitgift died, in 1604, he was appointed to succeed him. In this position he was a vigilant guardian of Episcopal power, and a rigid opponent of Puritanism; and it was the opinion of Lord Clarendon that, had his life been spared a few years longer, he would have broken down the party which, in the next reign, revolutionized the state. He left a treatise on the dangers of the Presbyterian discipline.

BANDA, a group of 10 islets in the Malay archipelago, and noted as the parent land of the nutmeg. They have been named by Malay navigators: *Pulo Nera*, island of palm wine; *Pisang*, banana; *Ai*, water; *Suwanggee*, sorcerer's island; *Api*, fire; *Lontar*, a writing leaf; *Rhun*, or *Rung*, a chamber; *Bonaguin*, giving strength; *Kappal*, horse; and *Pulo Bandan*, or *Banda*, united island; which designates the group. It lies between lat. 8° 50' and 4° 40' S.; and Fort Belgica, on Nera, the seat of the Dutch administration, is in long. 129° 54' 20" E. Area of the whole group, 176 geographical sq. m., of which the island of Lontar, or Great Banda, forms $\frac{1}{3}$. Api is a mountain cone, the most active volcano in the archipelago, although its height does not exceed 2,500 feet. Many terrific eruptions have taken place; in 1629, 1690, 1765, 1776, 1816, 1820, and in 1852. During the last eruption, an earthquake caused the sea suddenly to rise, and to rush inland, upon all the shores of this devoted group, for a distance of 3 or 4 miles, overwhelming villages and inhabitants; and stranding ships far in the interior. On

Dec. 21, the shock was felt in Java, and throughout all the great volcanic band of the Indian seas. A large portion of the inhabitants, who survived, fled to Amboyna. The population of the group has been recently estimated at 5,081. Of nutmegs, their chief production, there is annually raised an average of 400,000 lbs.; and 180,000 lbs. of mace. The whole trade of the islands consists in the export of these 2 spices, and in the importation of rice, and other articles for the subsistence of the inhabitants.

BANDA ORIENTAL, formerly a territory of South America, E. of the Uruguay river, between Brazil and the La Plata. It was successively under Spanish and Portuguese dominion, formed for a short time in 1815 a military republic, was united in 1821 to Brazil, with the name *Provincia Cisplatina*, subsequently became independent, and, in 1829, became a free republic, under the name of Uruguay. See URUGUAY.

BANDAGES, strips or bands of various material, employed by surgeons for the fixing of dressings, the approximation and union of cut or lacerated flesh and fractured bones, the compression of blood-vessels, and the support, and retention in their natural situations, of weak, protruding, or displaced parts. Bandages are usually composed of flannel, cotton, or linen; sometimes of stocking net, called "elastic web," or of India rubber interwoven with silk and cotton. They are named according to their construction, as simple and compound bandages; or in reference to the purpose for which they are applied, as the uniting, dividing, retaining, expelling, compressing, and suspensory bandages; or according to their form when applied, as the spica, from its supposed resemblance to an ear of wheat, the figure of 8, the stellated, or star-like, the spiral, and the reversed; or from their shape as prepared beforehand by the surgeon, as the T bandage, the many-tailed, the single and double-headed rollers; or in reference to some peculiar preparation, in order to adapt them to particular purposes, as the starch, the dextrine, and the plaster of Paris bandages.—The respective advantages of these different kinds of bandage are as various as their names; the many-tailed affords facility of adaptation to fractures of the upper and lower extremities; the T bandage, formerly in frequent requisition, has been generally superseded of late by the simpler and more manageable kinds, and is now rarely used except for the perineum and adjacent parts; the many-tailed is convenient for examinations of the wounded part, and a portion of it can be removed without disturbing the entire dressing; the elastic web and gum elastic yield to sudden swellings, and are freer from the dangers of undue compression; the starch, dextrine, and plaster of Paris bandages, afford firm and equable support without risk of displacement by the movements of the body, or common accidents, and enable the patient to

leave his bed early, to take gentle exercise. The idea of an immovable apparatus for fractures of the lower extremities is by no means a new one; the Moors, in Spain, used plaster of Paris moulds, as do some inferior surgeons in Italy even now; and, from time to time, white of eggs and wheat flour, and powdered chalk mixed with white of eggs, have been used to stiffen paper splints and bandages. The famous starch bandage, so serviceable in the hands of skilful surgeons, is the result of a series of experiments instituted in 1834, by M. Seutin, professor of operative surgery in the university of Brussels, and surgeon of the hospital St. Pierre, under whose care were many of the wounded in the siege of Antwerp. His plan was thoroughly tested and adopted by Velpeau, who, however, substituted dextrine, a substance obtained by the continued action of diluted sulphuric acid upon starch at the boiling point, for the starch. The objection to any sort of immovable apparatus is, that it is more or less dangerous in careless or unpractised hands; the constitution and present condition of the patient must be carefully considered, as well as the precise nature of his case; the apparatus should only be applied in favorable cases of simple fracture without much contusion; the bandages should be previously shrunk; the heel and toes should be left open for inspection, in the event of mortification; and, above all, the bandages should be applied very evenly and lightly, and at once entirely removed if the patient complains of them. In the "British Medical Journal" of Feb. 14, 1857, a plaster of Paris bandage, made by rubbing dry plaster into an ordinary bandage, is described. It is intended as a substitute for the starch bandage of Seutin, and is said to be lighter and to dry much more quickly. The latter quality causes it to adapt itself with more accuracy; the patient can better maintain his position during the shorter period, so that the bandage is free from the creases which are apt to be produced in the starch bandage by involuntary movements; and the patient is ready to be moved much sooner than when the starch is used—often a great advantage in military practice. Of course the bandage is thoroughly moistened as it is applied. This plan is said to have been in favor with Pirogoff at Sebastopol. The ordinary bandages are often dampened with plain water, and sometimes saturated with medicated solutions. That constant companion of the operating surgeon, the roller, is a strip of flannel, cotton, or linen, of any required length, and from 2 to 6 inches wide; the rolled end is called the head, and the loose one the tail; sometimes both ends are rolled, and then it is called double-headed. This roller is the parent of many other varieties of bandage, and, according to the manner in which he adapts it to the nature of the injury, the surgeon produces the spiral, the reversed, the figure of 8, the stellated bandage, &c. In the process of applying

it skilfully all the objects of good bandaging appear: gentle and uniform support, firm position without tightness, but, above all, equal distribution; for partial compression by a bandage, if long continued, is exceedingly liable to produce mortification.

BANDALEER, or **BANDOLIER** (Dutch, *band*, and *leer*, leather), a broad leathern belt, worn by musketeers over the right shoulder, and under the left arm, to sustain their muskets and cases of ammunition.

BANDANNA, a term derived from the Hindostanee, employed to denote a style of calico printing consisting of white or light spots strewn over a Turkey red or dark ground.

BANDARRA, GONÇALO ANTONIO, surnamed the Portuguese Nostradamus, born at Villa de Trancoso at the beginning of the 16th century, died at Lisbon in 1556. He occupied among the shopkeepers of Villa de Trancoso, a respectable position as a cobbler, and occasionally when business was slack, he treated his friends to an entertainment of poetry. In a short time his verses, entitled *Trancos Redondilhas*, were repeated in the streets of the little village, and as they turned upon religious subjects and prophecies, the poor fellow was scented out by the inquisition, his shop was shut up, and he was condemned to remain as a penitent near the stake, while another offender, Antonio Jozé da Sylva, was burnt. When the terrible ceremony was over, he was allowed to return in peace to his village to cobbler as much as he pleased, but not to compose any more poetry. The poetical wings of the cobbler were thus completely cut off by the officers of the inquisition, but posterity remembered gratefully his prophetic aspirations. He was called *o sapateiro santo* (the holy cobbler), and Don Alvan de Abranches erected a monument to his memory upon his tomb in the church of Trancoso. Long after his death, in 1603, a volume appeared in Paris, entitled *Paraphras e concordâncias de algumas prophécias de Bandarra, sapateiro de Trancoso*, and strange to say, this book fell into the hands of an illustrious Portuguese missionary in the valley of the Amazon, Antonio Vieira, whose ardent mind attached to Bandarra's prophecies about the 5th empire of the world a political religious signification, and he went so far as to publish a book on the subject (1644) wherein he predicted the resurrection and triumphant reign of King João IV., which was immediately seized by the inquisition, and subjected him to perpetual persecution. This circumstance imparted in future more importance to Bandarra's work; it was published at Nantes in 1644, and his poetical prophecies were adopted by a sect, called the *Sebastianistas* which is not yet extinct. As Bandarra himself could hardly write, the book which bears his name was evidently concocted by those who knew his songs and ideas from hearsay, and has been gradually improved, until it obtained for his name even a literary fame, to which the

humble cobbler never pretended in his lifetime.

BANDE LA ROCHE, a valley in the department of Vosges, France, celebrated as the scene of the labors of Oberlin, the devoted Protestant pastor. In the churchyard of the village of Fonday, at the entrance of the valley, Oberlin was buried. A plain tombstone bears his name, and the inscription, "He was 60 years the father of this district."

BANDEL, JOSEPH ERNST VON, one of the most distinguished of modern German sculptors, born at Anspach in 1800, studied at Munich, where, at the exhibition of 1820, his statues of "Mars" and "Charitas" were much admired. His busts of the king of Bavaria, and of various Bavarian notabilities, displayed also much ability, and of his later works of art, a group of Amor and Psyche and a Venus, both in plaster, and "The Spirit of Life," an alto rilievo of Carrara marble, bear witness to his remarkable progress in his art. His most famous achievement is the colossal national Hermann monument. In the delicacy and elegance of his works in marble, he is hardly inferior to Canova.

BANDELLO, MATTEO, an Italian priest and novelist, born at Castelnovo Scrivia, in Piedmont, in 1480, died at Agen, in southern France, about 1562. In the early part of his life, he entered the order of the Dominican friars. In 1501, he accompanied his uncle, who was appointed general of this order, on a visit to the different cities of Italy. Here many social opportunities presented themselves to the young priest, of which he afterward availed himself with great humor and effect in his novels. For some time he officiated as teacher of Lucrezia Gonzaga, whom he afterward celebrated in verse, and subsequently resided at Milan, until, as a partisan of the French, he was compelled to resort to flight, in 1525, when the Spaniards took possession of that town. He found an asylum with Cesare Fregoso, an Italian general in the French service, whom he accompanied to several courts in Italy. After Fregoso's death, he continued to reside in the house of the general's family at Agen, and eventually, in 1550, he was appointed by the king of France bishop of Agen. He accepted a part of the emoluments of this office, and had the duties discharged by the bishop of Grasse, while he devoted himself to completing his tales, which he had written in Italy during his youth, and which some of his friends had recovered from the hands of the soldiers who burnt his house at Milan. These tales were first published at Lucca, in 1554. A fine edition was brought out at London in 1740. A German translation appeared at Frankfort in 1818. They are divided into 4 parts, the first 8 parts containing 59 and the 4th 28 tales. Although inferior to Boccaccio's in point of purity and elegance of language, they are distinguished by sparkling vivacity, and great originality of conception, which secured for them an abiding popularity, not only in Italy, but also in Eng-

land, where they attracted the attention of the dramatists of the Elizabethan era. The plots of Shakespeare's "Romeo and Juliet," "Twelfth Night," and that part of "Much Ado about Nothing," which relates to Don John, Claudio, and Hero, are all derived from Bandello. Massinger's "Picture" is taken from the same source. So are the plots in Beaumont and Fletcher's "Maid in the Mill" and the "Triumph of Death." Bandello translated the "Hecuba" of Euripides into Italian, and was also a successful writer of poetry, but his fame chiefly rests upon his tales, which have been immortalized by the cunning genius of Shakespeare.

BANDES NOIRES, an appellation given during the French revolution to companies of capitalists and speculators, who bought up, on speculation, the forfeited estates of the church and nobility. They were considered by many as hordes of Vandals bound to destroy the monuments which kings, nobles, and religious orders had erected all over France; and thence the scornful denomination, which was continued nearly up to 1830. But while the Bandes Noires removed some castles and monasteries which ought to have been preserved as relics of art and religion, they did much toward the prosperity of the country, by improving unproductive lands and disseminating among the people landed property, which previously was concentrated in the hands of privileged classes. The term was originally applied to a body of German soldiers, who were employed in the Italian wars by Louis XII. of France, and who received the name from carrying black colors after the death of a favorite commander. The appellation was also assumed for the same cause by different Italian and French troops in the 16th century.

BANDETTINI, TERESA, an Italian poetess, usually known as Amarilla Toscana, born at Lucca, in 1768, and died April 5, 1837. Originally intended for a danseuse at the opera, she early showed such talent as an improvisatrice that the project was abandoned, and she was permitted to educate herself and to indulge her genius for poetry as she desired. In 1788, she published a volume of *Rime diverse*, and soon after, *La Morte di Adone*, a poem in 4 cantos, *Il Polidori*, &c. She was versed in several languages, and translated from the Latin and Greek with ease. Possessing remarkable powers of improvisation, she seems to have been fully appreciated by the Italian public; honors innumerable were showered upon her, the most distinguished men of the time walked in procession at her triumphs. Monti and Mazza, and even the severe Alfieri, wrote sonnets in praise of her genius and many virtues; her bust in marble was placed in the academy of Lucca, and in 1794 she was publicly crowned with laurel at Rome. She also received crowns from the cities of Perugia and Mantua. In 1789 she was married to Pietro Landucci. Her death, although at a great age, was lamented by all Italy, as well for her exemplary character, as for her great talents.

BANDIERA, ATTILIO and EMILIO, Italian conspirators, born at Naples, the 1st in 1817, the second in 1819, executed at Cosenza, July 25, 1844. Descended from a patrician family of Venice, they were the sons of an Austrian vice-admiral, and themselves lieutenants in the Austrian navy, but were totally opposed to the political creed of their father, who was an adherent of the Austrian government, while they embraced with fervent enthusiasm the cause of Italian independence. In 1843, they opened a correspondence with Mazzini; in 1843, the Romagna was convulsed with agitation, and the Bandieras endeavored to add fuel to the flame; but in vain, and they had to fly to Corfu, in 1844, to escape from the Austrian police. Their intention to win over to their cause the whole navy and army, caused anxiety and dread to the government. The Austrian viceroy, Rayner, appealed to the mother of the young men, and offered them a free pardon if they would only desist from their purpose. Attilio and Emilio rejected the offer, and on being accused of high treason, they boasted of it in the papers of Corfu, and called on their compatriots to imitate their example. But this appeal was without a response. Yet, destitute of means as they were, on receiving exaggerated news of an outbreak in Calabria, in 1844, they effected a landing with 20 friends near the mouth of the river Neto, on June 16, of that year, in the hopes that their appearance would produce an electric effect, and rouse the people to action. But the spies of the Neapolitan police caused them to be arrested near San Giovanni in Fiore, and on July 25, 1844, the two young men were shot, without trial, with 7 of their companions, on the public market-place of Cosenza. They died undaunted. Their last words were *Viva l'Italia!* It should not here be forgotten, that the name of an English cabinet minister was mixed up with the tragic fate of the Bandieras. It was Sir James Graham, then postmaster general, who opened their letters to Mazzini, in the London post office, and played the part of a Neapolitan spy and informer.

BANDINELLI, BAOCIO, an Italian sculptor, born at Florence, 1487, died in the same city, 1559. His father was a jeweller, but the young Bandinelli, evincing a talent for sculpture, was placed with Francesco Rustici, under whom he made great progress. He wished to surpass Michel Angelo, and with this object in view, attempted painting, in which, however, he did not succeed. Abandoning painting, he devoted himself wholly to sculpture during the remainder of his life. Among his best works are a statue of Orpheus, copied from the Apollo Belvedere; a group of Adam and Eve; a copy of the famous group of the Laocoon, in regard to which he boasted of having surpassed the original, which gave rise to Michel Angelo's remark, *Chi va dietro ad alcuno, non può mai passare innanzi*, "He who follows another, can never pass before him;" the "Descent from the Cross," the "Martyrdom of St. Lawrence," the

"Massacre of the Innocents," and the colossal Hercules and Cacus. Beside these, he executed many works in bass-relief, some of which have been much admired. His works display a great knowledge of anatomy, and much fertility of imagination, but are deficient in grace, and somewhat cold and hard. Nevertheless, he ranks very high as a sculptor, and is mentioned by Benvenuto Cellini as worthy of a place by the side of Donatello and Michel Angelo. As a private man, he was disagreeable; proud of his own talent, and jealous of the success of his brother artists. He was the enemy of Michel Angelo, as well as of Benvenuto Cellini, and was accused of having destroyed a celebrated cartoon drawn by the former, and which was cut to pieces by some one in 1512, during a revolution in Florence. He was patronized by Pope Clement VII., and the emperor Charles V., and received from the latter the decoration of the order of St. James. At his death, he left to his children a large fortune, which he had accumulated by his industry and economy.

BANDINI, ANGELO MARIA, a learned antiquary, born at Florence, Sept. 25, 1726. He was educated by the Jesuits, and after taking orders, resided for some years at Rome, where he pursued his literary labors with untiring industry. When the famous obelisk of Augustus was discovered, he was employed, by the pope's order, to write a description of it. In 1750, he took charge of the Marucellian library at Florence, and in 1756, of the Laurentian, which office he held until his death in 1800.

BANDITTI, a term Anglicized from the Italian, at least as early as the time of Shakespeare, and signifying robber bands, infesting the mountain passes of Italy. The word is not used by the Italians, generally, in this sense, but among them signifies, according to its etymological origin (*bandire*), persons who have been outlawed, or put under the ban of the state for any political offence. The disorderly condition of the Italian states after their dismemberment under the weak successors of Charlemagne, originated and kept in employ these bands of outlaws. For slight offences the petty princes of these states pronounced the civil ban upon their subjects, which deprived them of civil protection, and made them at once Ishmaelites to society. The rivalries existing between these princes made the outlaws of one province the convenient instruments of another. Thus a state of things was very soon produced in which the political power was fairly contested between the states and their outlaws, and not unfrequently, as in the case of Ferdinand I., the civil authorities were compelled to make concessions, and even humiliating concessions, to these banished hordes, who in many instances had settled in the undisturbed enjoyment of whole towns and districts. In some parts of Italy, especially in Naples, the inhabitants still carry on the double occupation of tilling the land and plundering travellers. The Italian states are yet unable wholly to suppress these outlaws, though since

the vigorous measures of the Roman states, in 1820, and subsequently (1828), the efforts of the Austrian government, the hordes who had settled in the quiet occupancy of cultivated territory, have been compelled to a nomadic life in mountain passes and comparatively unfrequented places. From 1812 to 1828 was the golden age of Italian bandits. They infested like locusts the entire frontiers of the Roman and Neapolitan states. Since that time they have mainly been confined to Sicily. They used to occupy a pass called the valley of Ponte di Bovino, on the road from Naples to the plains of Apulia, where they were in the habit of plundering travellers. In some instances they exacted from travellers a certain sum of money, and then gave them a pass, by means of which they performed the rest of their journey without molestation. They have seldom broken their word either with their tributary victims, or with those princes whose tools they have from time to time become for mercenary considerations, thus illustrating the old adage of "honor among thieves."

BANDON, or BANDONBRIDGE, a town in Ireland, situated on both sides of the Bandon, 20 miles S. W. of Cork; pop. 9,049. The town is well built of stone from a neighboring quarry, and supplied with gas and water. The court house, market house, and bank, are the chief buildings. Bandon was peopled by a colony of English Protestants. It contains 2 good classical schools, 2 Protestant Episcopal parochial, 1 Methodist, and 2 national, schools. Twenty-five years ago it was a flourishing manufacturing town, but its prosperity has now well-nigh departed. It sends 1 member to parliament.—Also, a river in the county of Cork, which rises in the Carberry mountains, near Dunmanway, and, after a course of 40 miles in an easterly and south-easterly direction, enters the Atlantic, forming Kinsale harbor. It is navigable for vessels of 200 tons for 15 miles inland. Spenser sang of this river,

The pleasant Bandon, crowned by many a wood.

BANDTKE, or BANDTKIE, GEORGE SAMUEL, a Polish historian and biographer, born at Lublin, Nov. 24, 1768, died June 11, 1835. He was educated in Germany, and was long employed as a private tutor, spending 2 years at St. Petersburg, where he studied the Russian and old Slavonic literature. He afterward became teacher of Polish in a public school at Breslau, and, in 1811, librarian and professor of biography in the university of Cracow. He wrote a Polish-German dictionary, a history of printing in Poland, and other works, among which his *Historia narodu polskiego* (History of the Polish People) has a high reputation for thoroughness and ability.

BANDUNG, one of the 11 districts which constitute the Prayangan, or Prianger regency, in the island of Java. It is situated S. W. of Batavia, and is one of the loveliest and most picturesque portions of the island. The Radens, or petty Javanese chieftains, of the district are noted for their hospitality and attentions to the

few strangers who, notwithstanding the jealous restrictions of the government at Batavia, are occasionally permitted to pass into the interior to visit the native princes. Tankuban Prah, the boat-mountain, and other remarkable natural curiosities, and many ancient ruins, are to be found here. Its chief culture is coffee.—Bandung, chief town; pop. 3,500; pop. of district, 202,000.

BANER, JOHAN, a Swedish general, celebrated for the prominent part which he took in the 30 years' war, born June 23, 1598, near Stockholm, died May 10, 1641, at Halberstadt, in Prussian Saxony. He was descended from a family of great distinction in Sweden, but his father was one of the councillors who had given umbrage to Charles IX., and was doomed to die on the scaffold, in 1600. When called upon to join the royal army, the young man refused to serve under a sovereign who had been the hangman of his father. After the death of Charles IX., however, he took an active part in the conflicts with Russia and Poland, and soon distinguished himself. We find him bearing the brunt of the battle of Leipsic, and sharing with Gustavus Adolphus the honors of the memorable victory at Pappenheim. After contributing toward the conquest of Augsburg and Munich he became commander-in-chief of an important section of the Swedish army, and, although he had been severely wounded in the attack upon the camp of Wallenstein, he was unwilling to desert his post, and actually succeeded, in conjunction with Horn, in expelling the enemy from Bavaria. After the king's death he was invested by Oxenstiern with the supreme command of the army. At first baffled in his operations against Bohemia, he soon vindicated the honor of the Swedish arms by a brilliant victory at Wittstock, Sept. 24, 1636, which was followed up by a still more decisive triumph at Chemnitz in 1639. Elated by these repeated successes, he overran the whole of Germany, and tarnished the glory of his life by the cruelties which he inflicted upon the population. His attempt in 1641 to seize the emperor and his diet at Regensburg was frustrated by the difficulty of crossing the Danube, the ice of the river having suddenly given way. But for this accident his daring exploit would probably have been successful. Although many contemporary officers may have been superior to him in the knowledge of military science, he had few superiors in recklessness and impetuosity. As a man he incurred the censure of his contemporaries by his intemperate habits, and by the haughtiness of his disposition.

BANFF, a maritime county of Scotland; area, 647 sq. m.; pop. 54,171. The surface is greatly diversified, but generally mountainous and hilly. On the coast it is more level and the soil good. The northern part of Ben-Mac-Dhui, 4,362 feet high, and the eastern half of Cairngorm, 4,060 feet high, are in this county. In the southern part cattle-breeding is the principal occupation. There are several cairns, or

tumuli, in the county. The climate is variable. On the coast it is much drier and more genial than in the interior. The salmon and herring fisheries are important. Lead, iron, and other minerals, and fine marble, are found in the county. The Spey, Avon, and Doveron rivers intersect the county, which is divided into 24 parishes.—Its principal town is Banff, which carries on considerable trade in herrings, salmon, grain, and cattle. Pop. 6,000.

BANFI, the name of a Transylvanian family, originally of German descent. In former times we find many of its members holding prominent positions in the service of their country. In modern times Baron LADISLAW, born 1795, died 1889, exerted a marked political influence as champion of the Transylvania liberals, and Baron JOHANN, born 1816, served in the Hungarian revolutionary war under Gen. Bem, by whom he was held in high regard. Bem intrusted him with the command of the Transylvanian army, but he was overtaken by illness and compelled to retire from active service previous to the battle of Vilagoz.

BANFI, GIULIO, an Italian lute-player, died about 1670. On a voyage to Spain he was taken prisoner by the Tunisian pirates, with all his fellow-passengers. They were sold as slaves. Banfi's musical skill now became his salvation. He enchanted his master, was taken before the bey of Tunis, and enchanted him also. The bey purchased him, made Banfi his favorite, and afterward gave him his liberty. At the end of some time he obtained leave to cross over to Italy and thence to Spain. The king of Spain took him into his service. He wrote *Il Maestro di Ghitama*, dedicated to Ferdinand II.

BANG, or BANGUE, a narcotic made of the leaf of a kind of hemp (*cannabis Indica*), used by the Orientals as a means of intoxication. It is generally chewed.

BANG, the name of a Danish family, of which many members have held, at various times, high positions in the medical and other learned professions.—FREDERIK LUDVIG, born in Seeland, Jan. 4, 1747, died Dec. 26, 1820, in Copenhagen, where he was professor at the university.—PETER GEORG, jurist and statesman, entered the Danish cabinet in consequence of the events of March, 1848, and became minister of the interior in Nov. 1848; resigned in Sept. 1849; became minister of the interior in Dec. 1854, and prime minister in Oct. 1855. Resigned in Oct. 1856, and became president of the supreme court.

BANGALORE, a town of southern India, in the state of Mysore. It was founded by Hyder Ali, under whose protection it rose rapidly. His successor, Tipoo Saib, neglected it, partially dismantled the fortress, and, after capricious acts of oppression, finally razed the place, and drove away the wealthy inhabitants. On the death of Tipoo, the territory, though ruled by a native sovereign, came under British protection, and revived rapidly, and, from its situation, has considerable trade. Several roads

run through it, and the commerce extends over southern India. Pop. 60,000.

BANGKOK, the capital city of the kingdom of Siam, and a place of extensive trade, on both banks of the river Menam, about 20 miles from its mouth, lat. 13° 58' N., long. 100° 40' E. It consists of 3 portions, viz., the royal palace or citadel on an island enclosed by walls, the city proper, and the floating town. The river is navigable to the city for vessels of 250 tons. Bangkok carries on a very active trade with the ports of the Chinese empire, and with Singapore and contiguous places. The city proper extends for 3 or 4 miles on both banks of the river. It is entirely of wood, except the palaces of the kings, the Buddhist temples, and the houses of some of the ministers, which are brick or mud. The houses are built upon a foundation of piles above the bank, to guard against the inundations to which the banks are liable. A light and sharp boat is attached to each house, for purposes of locomotion. The floating town extends for 8 miles on each side of the river, which is here about a quarter of a mile in breadth. It is made of wooden houses, of a neat oblong form, which rest on bamboo rafts staked to the channel of the river. The houses are very small, and have small platforms which are used as rafts, fronting the river centre. The portion which has the palace of the king, is on an island about 2 miles in length, and separated from the continent by a narrow arm of the river. It is walled, with bastions and numerous gates. The palaces are small buildings in the Chinese style, topped by a diminishing series of tiled roofs, ornamented by a small spire or spires. The temples are placed in the best and most elevated localities, and in close propinquity to them are rows of small buildings in straight lines, all surrounded by bamboo hedges. They consist of one spacious and lofty hall, with a multiplicity of doors and windows. Both the inner and outer surfaces are decorated with a profusion of ornaments. In the central temple here, which is in the form of a parallelogram, is a sitting figure of gigantic proportions of Buddha. In a separate apartment near this figure the sacred library is preserved. The cells of the priests are slight wooden structures, raised on pillars, and skirting the whole face of the square. The principal of these temples, Pra-cha-di, consists of a series of dodecahedral terraces, diminished to nearly one-half of the whole height, and surmounted by a handsome spire, terminating in a glass globe. The population is mostly Chinese. It is estimated at 400,000. Bangkok has manufactures of tin, iron ware, and leather. The exports are sugar, black pepper, tin, cardamoms, fine woods, ivory, cotton, rice, hides, horses, skins, and feathers. The imports are tea, quicksilver, raw and manufactured silks, porcelain, and other articles of Chinese manufactures; camphor and edible birds'-nests, from the Malay archipelago; European and Indian fabrics; and opium and glass-ware from the British and

Dutch East India settlements. The country surrounding Bangkok is flat, contains rich iron mines, and extensive forests of teak. The foreign trade is nearly monopolized by the government by means of heavy restrictive duties. Bangkok is subject to the visitation of destroying epidemics. In the summer of 1849, the cholera was fatal to 20,000 persons in the course of 12 days.

BANGLI was formerly one of the 9 independent principalities into which the island of Bali was divided; but is no longer enumerated among the 7 states, forming the heptarchy which now governs this island; being merged into the adjoining states of Mengooi and Gianjeer. Bounded N. by Baliling, E. by Karang Assam, S. by Kloukong and Gianjeer, and W. by Mengooi. Pop. in 1842, according to M. Huskus Hoopman, 80,000.

BANGOR, a city and seat of justice of Penobscot county, Maine, on the west bank of the Penobscot river at its junction with the Kenduskeag, about 60 miles from the ocean, 68 miles from Augusta, the capital of the state. The union of the rivers affords a safe and capacious harbor, accessible at the highest tides, which rise 17 feet, to the largest vessels. The city is situated on both banks of the Kenduskeag, connected by a fine stone bridge, toward which the principal streets converge. There is also a bridge, 1,320 feet long, across the Penobscot, connecting Bangor with Brewer. Many of the streets are broad and well shaded with elm trees. The private dwellings are generally tastefully constructed, and the public buildings lay considerable claim to elegance. The principal of the latter are the custom-house, situated over the Kenduskeag, a handsome granite structure, costing \$100,000; Norombega hall, and market, the largest and best in the state; and the Bangor house, a first-class hotel. There are 12 churches, several of which are greatly admired for their architectural excellence. The growth of the town received its principal impetus during the "land speculations" of 1836 and '37; pop. in 1790, 169; 1800, 277; 1810, 850; 1820, 1,221; 1830, 2,868; 1840, 8,629; 1850, 14,432; 1857, about 17,000. It was incorporated as a city in 1834. Its chief business is in lumber, of which it was at one time the leading market in the world, but since the Canadian reciprocity treaty this trade has declined. It is also the centre of a fine agricultural district. In 1852, about 200,000,000 feet of lumber were surveyed there. The Kenduskeag, a short distance above the city and throughout its entire course, as well as the Penobscot, a few miles above tide water, furnishes abundance of water power. The head waters of the Penobscot traverse immense forests of pine, spruce, and hemlock. The cutting and hauling of this to the river in the winter—"driving" it to the mills, and "booming" it in the spring—then sawing it into boards, planks, joists, shingles, laths, and every description of "dimension stuff," rafting it thence to the vessels in the harbor, and loading it on

board, give employment to a large number of vigorous and athletic men. About 2,000 vessels are annually engaged in this trade, during the 8 or 9 months in which the river is free from ice. The Bangor theological seminary, Trinitarian Congregational, originally established in 1816, at Hampden, 6 miles below the city, occupies one of the most elevated portions of the town, overlooking the city and the Penobscot river. The seminary has 4 professors, 40 students, and a library of about 8,000 volumes. The public schools of Bangor are among the best in the state. They are divided into primary, grammar, and high schools. The amount annually expended upon them, by vote of the city, is about \$20,000. The Penobscot and Kennebec railroad, completed in 1856, connects Bangor with Waterville, where there are connections by railroad with Portland, Augusta, Bath, and other places. The Bangor and Piscataquis railroad, one of the oldest railroads in the United States, also connects it with Oldtown, 12 miles above, on the Penobscot. There are lines of steamboats running to Portland, Boston, and the towns and cities along the river. Beside the manufacture of lumber, there are extensive iron foundries, furniture manufactories, planing mills, and ship yards. Two daily and 4 weekly newspapers are published here; there are 18 banks with an aggregate circulation of \$300,000.

BANGOR, a city of Wales, county of Caernarvon, archbishop's see. It has a cathedral built on the site of an ancient church in the 15th and 16th centuries. It is much resorted to for sea-bathing.—There is also a Bangor in Ireland, county of Down, a place of great antiquity.

BANGOR MONACHORUM, a parish of North Wales, lying partly in the county of Flint, and partly in that of Denbigh. It is noted for having once contained an immense monastery, which at one time is said to have had 2,400 monks. A large number of these monks were murdered in the early part of the 7th century, by the Northumbrian Saxons. The celebrated Pelagius, and Gildas, the first British historian, are said to have been once residents at this monastery. No traces of it are now to be seen.

BANGS, NATHAN, D. D., a minister of the Methodist Episcopal church, born in Stratford, Fairfield county, Conn., May 2, 1778. He commenced his public life as a school teacher and surveyor, and continued in these pursuits for several years, during which time he made a tour to Upper Canada. In 1800 he became the subject of converting grace, and shortly after, in 1801, being in the 23d year of his age, he entered the itinerant ministry of the Methodist E. church. His first appointment was to the bay of Quinte, Lower Canada, in 1802, and his subsequent appointments embraced the upper and lower provinces, extending from Detroit to Quebec. After remaining about 7 years in Canada, he was appointed to circuits in the Albany district, and in 1808 was a member of the general conference. His first appointment

in the city of New York was in 1810, and to him, perhaps, more than to any other man, is Methodism indebted for the position it occupies in that city. He continued for 10 years to fill some of the most important appointments in the church, being elected successively to the different general conferences held during the time, and being connected with some of the most important committees, giving the entire attention of a clear mind and pure heart to all the interests of the church. Such was the respect had for his talents and abilities, that in 1820 he was elected to the agency of the Methodist book concern, and on him devolved, also, the editorial supervision of all the books published by the establishment. After remaining in this office for 8 years to the entire satisfaction of the church, he was elected by the general conference editor of the "Christian Advocate and Journal," and continued to be the general editor of all the books. Four years of service being ended as editor of the "Advocate," he was next elected to the editorship of the "Methodist Quarterly Review," still retaining his position of general editor to the book concern. Such had been the interest which he had taken in the cause of missions, and so thoroughly was he identified with this great cause from the beginning, that the general conference in 1836 elected him the corresponding secretary of the missionary society. His labors in this department have been such as justly to entitle him to be styled "the father of the missionary society of the M. E. church." He remained in this office discharging most efficiently its duties until he was elected by the trustees of the Wesleyan university at Middletown, Conn., as president of that institution. Yielding to the urgent solicitation of the friends of education he accepted this post, and remained in it for several years. On his resignation he re-entered practically upon the work of the ministry, and filled some most important charges in New York and Brooklyn, closing his effective labors on the New York east district. Being unable from the infirmities of age to do effective work, it was found necessary in 1852 for him to take a superannuated relation, which continues to this day. Dr. Bangs is the author of numerous works, among which are the following: "The Errors of Hopkinsianism," "Predestination Examined," "Reformer Reformed," "Life of the Rev. Freeborn Garrettson," "History of Missions," "Original Church of Christ," "Life of Arminius," "Emancipation," "Condition, Prospects, and Responsibilities of the M. E. Church," "Letters on Sanctification," &c., but his chief labors were bestowed upon a complete "History of the Methodist Episcopal Church," 4 vols. 12mo. His early identification with the church, and his practical knowledge of its several departments, together with his abilities as a writer, eminently fitted him for the performance of this task, and its general circulation as a standard work, shows that the public have appreciated his labors.

Beside the books which he has written, he has contributed largely to the periodical literature of the church. He is now one of the oldest pastors in the city of New York, enjoying the respect and confidence of all denominations, and much esteemed by the church of which he has been for so many years a laborious and successful minister.

BANGYA, JOHANN NEPOMUK, a Hungarian adventurer and journalist, born near Comorn about 1816, left the profession of the law to serve in the Hungarian noble guard at Vienna, but escaped to Hungary on account of debts, after 1840, and led a vagabond sort of life in various Hungarian cities. However, having gone to Presburg as a newspaper writer, he married the daughter of a rich official near that city, and then travelled in France and Germany. After the outbreak of 1848 he conducted a radical newspaper at Presburg, and served in the revolutionary army, but without particularly distinguishing himself. When the Hungarians were defeated, he fled to Turkey, embraced Islamism, and entered the army under the name of Mehmet Bey. In 1854 he was sent to the Caucasus, taking with him some 400 Poles and Hungarians, and gained great popularity among the mountaineers by his success in guerilla warfare. In 1856 the Circassians made him their commander-in-chief. True to his former taste for journalism, in the midst of the turmoils of his present mode of life, he writes and prints a newspaper, having supplied himself for the purpose with a printing-press and types, and 2 Magyar compositors, who accompany him wherever he goes.

BANIAK, one of a group of islands of the same name, off the west coast of Sumatra, about 17 miles in length, and 7 in breadth. The *beche de mer*, or sea-slug, is found here; long. 96° 48' E., lat. 2° 10' N.

BANIALUKA, a small fortified town in Turkey in Europe, in the province of Bosnia, S. W. of Bosna-Serai; pop. about 8,000. It contains 40 mosques, several colleges, public baths, a cathedral, and a powder-mill.

BANIAN TREE (*ficus religiosa*, or *ficus Indica*), a native of the East Indies, remarkable for its prodigious size and extent, and distinguished from other trees in this, that it never ceases growing. Its branches throw out new roots at first consisting of slender fibres, hanging in the air, and growing downward. Upon reaching the earth's surface, they strike in, and become large trunks, in their turn sending forth branches, which repeat the same process. A famous banian stands on the banks of the Nerbudda, which was once capable of receiving 7,000 men beneath its shade. Though much reduced in size, its outer wing of trunks still encloses a space of over 2,000 feet in circumference. The great pagodas are generally found near these trees, which the Hindoos regard as a type of the Deity.

BANIER, ANTOINE, a French literary man, born in Auvergne, Nov. 2, 1678, died at Paris, Nov. 2, 1741. At the Jesuit college of Olermont

he distinguished himself by his astonishing memory. Afterward, having observed the falsity of the popular systems of mythological interpretation, he devoted himself with great assiduity to that department of classical learning. The knowledge and judgment which he displayed gained him great reputation, and secured his admission to the academy of inscriptions and belles-lettres.

BANIÈRES, a French priest, lawyer, geometer, soldier, poet, and actor, a versatile genius, born at Toulouse, at the commencement of the 18th century. His parents destined him for the church, and he received a theological training, but the bar drew him away from the pulpit. He soon tired of law, and took to the study of geometry. He then enlisted as a soldier. He had been a dragoon but a short time, when he came out as a poet. He produced a play for private theatricals, on the death of Julius Caesar, which was afterward played in public at Toulouse, with himself in the principal character. It is doubtful whether he obtained his discharge from the service, but it is certain that he appeared henceforth as a professional actor. His *debut* on the Parisian stage was in *Mithridates*, June 9, 1729. His fiery Toulousan manner and provincial accent made the Parisians laugh. After the fall of the curtain the Toulousan came forward. "Gentlemen," he said, "you have taught me a hard and humiliating lesson; come and see on Saturday how I shall profit by it." The house was crammed on Saturday. Banières had almost overcome his provincialism. He kept on undaunted, and soon became the fashion. He afterward withdrew from the stage, and his end is involved in obscurity. One account says that he was court-martialled, and shot for desertion. Dumas has written a novel on his adventures.

BANIM, JOHN, an Irish novelist, born June, 1800, died August 1, 1842. He was one of the most popular and truthful delineators of Irish character, inferior only to Miss Edgeworth, while as works of art his novels stand much higher than her "Castle Rackrent," containing more humor and incident. The various popular works of fiction intended to bring home to general readers an apprehension of the lights and shades of Irish country life have certainly contributed to spread abroad a knowledge of Ireland, but whether the impressions generally acquired from such sources be correct is more than doubtful. Tales and stories are usually written for effect, and the Irish portraits and etchings thus placed before the ruling world have all the effect of high relief from the depth of the contrasts. Banim's works are free from this exaggeration, although his incidents are occasionally startling. The "Tales of the O'Hara Family" are his earliest and best production. He also wrote the "Croppie," the "Denounced," the "Smuggler," the "Mayor of Windgap," and "Father Connell." He received a small pension from the whigs in 1837, but he died in poverty at Windgap Cottage, Kilkenny.

BANISHMENT, compulsory departure from

a country inflicted as a punishment. It was known both to the Greeks and Romans; it was either perpetual or temporary; the Romans had a punishment closely analogous to a system of transportation, by which criminals were carried to some distant spot, where they were compelled to work and wear fetters. Banishment is a species of punishment unknown to the common law in the case of native born subjects, which, while it allowed men to be put to death, did not tolerate their enforced absence from their native land.

BANISTER, a river in S. Virginia, rises in Pittsylvania co., and flows in a S. E. course to the Dan river, in Halifax co., 10 miles below the village of Banister. Batteaux can ascend it to Meadville.

BANISTER, or HALIFAX COURT HOUSE, a post village, in Halifax co., Virginia, on the Banister river, 10 miles above its confluence with the Dan, and 120 miles S. W. of Richmond; pop. in 1853, 1,600. It is a place of great business activity. The Richmond and Danville railroad passes through it, and the river is navigable for batteaux from its mouth to Meadville, 10 miles above Banister. Six miles from the village a rich plumbago mine has recently been opened.

BANJARMASSIN (Javanese, golden garden), a sultanate of the island of Borneo, of pyramidal outline; the apex or northern limit is Mt. Luang; bounded E. by Passir and Tanah Boemboe, S. by Tanah Laut and Java sea, W. by Banjer river, and N. W. by territories Dusun Ulu and Dusun Ilir. Area, 5,808 sq. m.; population, 620,000. It is noted chiefly for its coal mines, which have been worked by the Dutch, within the last 10 years, to much advantage. The coal is of the same quality as that worked by the English on Labuan, and at the mouth of Brunai river, on the northern side of the island; and it is evident, from recent researches, that they are continuations of the same coal seam, stretching across the island 700 miles, which would make the Bornean coal-fields the largest in the world, after those of this continent. Convicts, mostly captured pirates, are the principal laborers in the mines of Banjarmasin; and by this economical management the coal can be produced at the mouths of the pita, at a cost of about 3 guilders, or a little less than \$1.50 per ton; it can be delivered at Batavia or Singapore, and sold profitably for \$5 per ton. The coal of Banjarmasin is of good quality, and resembles the Wigan or cannel coal.—Diamonds and gold are found in considerable quantity. The rats of this territory are worth, in Indian markets, over 100 per cent. more than those of any other country. The present fashion of the ladies, wearing hoops, has given an immense stimulus to the trade in this article. Banjarmasin exported, in 1855, rats to the value of 305,000 florins, or \$138,000; the export of 1858 will probably amount to \$500,000. One house of the city of New York ordered, in 1858, 1,500,000 lbs.

Banjarassin ratans.—The Kayan Dayaks in this territory are noted for their manufacture of sword and kreese blades, also fire-arms. The damascening of the sword-blades is esteemed by connoisseurs as surpassing that of the famous Damascus blades. For this purpose they make use of a peculiar white iron, found only in Celebes, and called *pamor*, which is very ingeniously mingled with the common, darker iron. The latter is of admirable quality, possessing strong magnetic properties. Dayak sword-blades are largely exported from Banjarassin, from Rotel, and other neighboring states, to Singapore, and are said to be highly prized by English officers. Many were in use at the siege of Sebastopol.—The culture of pepper was at one time very great in this territory, but is now almost abandoned, since the Dutch possession and their attempts to establish the *corvée* labor and system of cultures as enforced in Java. The greater portion of the population, five-sixths of which are Dayaks, are mostly in a semi-civilized, unreclaimed condition, and the other sixth, chiefly Malays and a few Chinese, evince, by frequent revolts, a reluctant obedience to Dutch supremacy. According to Dutch chronicles, their first intercourse with this state was in 1709, under Riebeck, when they attempted to contract for the monopoly of pepper; but it was not till 1756, after rendering important military services to its sultan, that the coveted monopoly was obtained. The sultan agreed to extend the culture to 15,000 piculs, or 2,000,000 pounds, but the utmost he ever succeeded in delivering to his allies was about 70,000. The price fixed was 6 Spanish dollars per picul of 125 Dutch pounds (133 *oes.*), which, as Mr. Crawford observes, "was no doubt thought at the time a very good bargain for the purchaser, and yet it is about one-fifth more than the same commodity may, under the existing commercial freedom, be had for in any native port of the pepper-producing countries." The result of the monopoly is what might be safely expected, the cessation of the culture of pepper in Banjarassin.—In 1785, the reigning prince having rendered himself odious to his subjects, the country was invaded by 8,000 Bughis of Celebes, who had been invited to make a descent. These were expelled by a Dutch force commanded by J. O. Van Braam, who dethroned the sultan, placing the younger brother on the throne, who, in reward for the service rendered by the Netherlands' India government, ceded to it his entire dominions, consenting to hold them as a vassal. This is the treaty under which the Dutch claim the sovereignty of Banjarassin, and whatever was once dependent on it.—BANJARMASSIN, chief town of the above state, situated on the right bank of Banjar river, 15 miles from its mouth. It is defended by Fort Van Tuyt. Pop. 5,000.

BANJO, a musical instrument much esteemed by the negroes of the southern United States, and regarded as an indispensable accompaniment to that species of entertainment known as

negro minstrelsy. As might be expected from its origin, its capacity is limited to the performance of such simple tunes as are peculiar to the plantations and the cabins of the negroes; but the originality and genuine melody which distinguish not a few of these airs have given the banjo an importance which it certainly would never have attained among a more cultivated race, and made it at this day as much our national instrument as the bagpipe is with the Scotch or the harp with the Welsh. It is purely an instrument of accompaniment, and may be said to be a rude attempt to combine the guitar with the tamborine. Its head and neck are shaped like the former while the body is a circular frame like the head of a drum, over which parchment is stretched in place of a sounding board. Five strings, of which the fifth is shorter than the others, pass over this parchment, and are played with the fingers and hand. The tones are monotonous, but forming a quaint accompaniment to the singer.

BANJOEMAS, a town in the Dutch East Indies, near the S. coast of Java. It has a population of 9,000, contains a fort and garrison, and is the governor's residence.

BANK (Italian, *banco*, a bench), in commerce, a place of deposit for money. The name had its origin in the fact that the Jews, who were the first to follow the business of lending money, were accustomed to assemble in the market-places in Italian towns, seated on benches there to transact their trade.—Banks are designed to afford safe places of deposit for the money of individuals, corporations, or governments; for the facilitating the exchange of money from the hands of parties who have payments to make to those of such persons as are to receive them, as well as for extending aid to business by granting loans or discounts on notes, bonds, stocks, or other securities. These institutions are of three kinds, and may be classed as follows: *Banks of Deposit* receive on deposit the money of individuals, corporations, or governments, and hold it subject to the draft of its owner or owners, or under such other agreement as may be entered into. *Banks of Discount* furnish loans upon drafts, promissory notes, bonds, or other securities. *Banks of Circulation*, pay out their own notes, which may or may not, according to circumstances, be payable in coin on demand. Banks which exercise the last of these functions generally unite the first and second.—The bank of Venice, the first establishment of the kind in Europe, was founded in the year 1171, and owed its existence to the crusades, and the necessity of the government obtaining means for conducting these wars. It was originally a bank of deposit, and in the earlier days of the institution, these deposits were not subject to draft, as is generally the case with banks of this kind. These deposits could, however, at the pleasure of the owner or owners, be transferred on the books of the bank. This system was at a later period discontinued, and the deposits became subject to draft. The

bank of Venice continued in existence without interruption until the overthrow of the republic in 1797, by the revolutionary army of France.—The bank of Genoa was projected in the year 1845, but did not go into full operation until 1407. It was for centuries one of the principal institutions of its class in Europe. Within a space of less than sixty years—first in 1746, and again in 1800—it was twice pillaged by a foreign foe, in the latter instance by the French army under Massena. From the effects of this disaster it has never recovered, and it has ceased to perform the general functions of a bank.—The bank of Barcelona was established in the year 1401, that city having been during the middle ages one of the most enterprising and flourishing of the commercial cities of Europe. Here it was that the system of negotiation of bills of exchange was first instituted.—The bank of Amsterdam was founded in the year 1609; Holland being then possessed of an important foreign trade. The bank of Amsterdam was a bank of deposit only, and the money in its possession was transferred on the books of the institution at the pleasure of its owner or owners. The primary object in the establishment of the bank was to give a standard or certain value to bills which might be drawn upon Amsterdam—rendered necessary by the depreciation of the coin, owing to its having been worn or clipped. Here these coins were received on deposit, and had their value established by weight or fineness. It was not the design on founding the institution that the funds should at any time be lent out, but should remain in its vaults. However, the directors having lent to the governments of Holland and Friesland a large sum of money, the fact became known on the invasion of the French army, and produced the ruin of the institution.—The bank of Hamburg was established in the year 1619. This institution is a bank of deposit and circulation, which circulation is based upon fine silver in bars. The stock of the bank arises out of the deposits, which are confined solely to silver. The bank of Hamburg differs essentially from any other banking institution in the world. The difference at which it receives and pays out the silver deposits—about $\frac{1}{3}$ of 1 per cent., constitutes the charge of the bank for custody of the funds intrusted to it. No institution in Europe at the present time enjoys a higher reputation for the manner in which, to the extent of the power granted, it conducts its business operations. Although in some respects it has undergone changes in its management since it was instituted, still the plan is essentially the same as it was in the year 1710. It is felt, as well by the mercantile community of Hamburg, as by those directly interested in the bank, that changes are necessary to conform to the present state of business. It is deemed desirable that the bank should be enabled to make better use of its surplus capital, which owing to restrictions is almost valueless.—The bank of Rotterdam was

established in the year 1635.—The bank of Stockholm in 1688.—The bank of England was established in 1694—William and Mary then being on the throne. To the war with France and the extreme difficulty experienced by the government in raising funds for conducting that war, is the institution of this monopoly due. Like the earliest of these institutions, the bank of Venice, it owes its existence to the wants of the government which gave it life. The idea first originated with Mr. William Patterson, a merchant of London, who readily saw that the government, which had been paying interest at the rate of from 20 to 40 per cent. per annum, would, without much hesitation, grant exclusive and almost unlimited privileges to such parties as would in turn furnish it with a fixed and permanent loan, at a reasonable rate of interest. The plan being brought to the attention of the king was submitted to the privy council, when the details were completed, and it was laid before parliament. There, however, it met with the violent opposition of a formidable party. Nevertheless, the bill was carried by the government, and on April 25, 1694, became a law. It was provided that the capital, £1,200,000, should be permanently lent to the government at 8 per cent. per annum, and that in addition to the interest, an allowance of £4,000 per annum should be made by the government for the management of the debt. So popular was the scheme, and so great was the desire of the public to become proprietors of the bank, that within ten days after the books were opened the entire capital was subscribed. The corporate title under which this institution commenced operations and has continued to the present day, is "The Governor and Company of the Bank of England." The bank was opened for business on Jan. 1, 1695; the stockholders having previously elected a governor, a deputy-governor, and a board of 24 directors. Those several parties were required by law to hold stock as follows: governor £4,000, deputy-governor £3,000, and director £2,000. The charter was granted for eleven years, and the officers were required to be elected annually between March 25 and April 25, after the year 1696. The bank immediately issued notes, none of which were, however, of a smaller denomination than £20 sterling; and commenced discounting bills of exchange at rates varying from 8 to 6 per cent., distinction being made in favor of those who used the bank as a place of deposit. Within 2 years the institution experienced considerable trouble, under the influence of which its notes fell as low as 20 per cent. below par. Although notes to the amount of £480,000 were redeemed, it was found necessary in the year 1697 to increase the capital one million of pounds sterling. This increase had the effect within a few months of causing the stock not only to recover a discount of from 40 to 50 per cent., but to sell at a premium of 12 per cent. The capital has at various periods been as follows:

1894.....	£1,306,000
1897.....	2,301,171
1708.....	4,408,348
1709.....	5,058,547
1710.....	5,558,996
1733.....	8,958,996
1743.....	9,800,000
1746.....	10,780,000
1783.....	11,642,400
1816.....	14,538,000

Since first this institution was founded, its capital and the loan to the government have been nearly identical in amount. In 1833, however, the debt to the bank was reduced about £3,500,000. The following are the dates of the several renewals of the charter, with the amount of government debt at each period, to wit:

Date.	Government debt.
1894.....	£1,300,000
1897.....	1,900,000
1708.....	8,875,037
1718.....	8,875,037
1749.....	10,700,000
1764.....	11,686,800
1781.....	11,686,800
1800.....	11,686,800
1838.....	11,015,100
1844.....	11,015,100

The management of the entire public debt of Great Britain is placed in the hands of the bank of England, for which service it has received compensation which has from time to time varied in amount according to circumstances. During the year 1845, this compensation was £98,111 19s. 10d. In addition to the permanent debt of the government to the bank, the latter contracted with the former on March 20, 1828, to pay at stated intervals between 1828 and 1828, certain pensions and annuities arising out of the then recent wars, amounting to £18,089,419. This is termed the "dead weight." In consideration of this the bank was to receive from the government an annuity of £585,740, for 44 years. On Feb. 26, 1797, an order was issued by the privy council to the bank restraining it from the further payment of specie. On the following day the officers of the bank issued a notice, in which they stated that in consequence of the foregoing order they "think it is their duty to inform the proprietors of the bank stock as well as the public at large, that the general concerns of the bank are in the most affluent and flourishing situation, and such as to preclude every doubt as to the security of its notes." At the same time they announced their determination to continue their usual discounts. Notwithstanding this assurance, the fact was that the order in council simply prohibited the bank from doing that which it was entirely out of the question for it to do. On Feb. 27, the same day on which the bank suspended specie payments, parliament approved the order in council. Notes of the denomination of £1 sterling were immediately prepared and issued, and all fractional parts of a pound were refused payment by the bank. This suspension, while it was absolutely necessary to prevent the ruin of the bank, was of equal importance to every business interest throughout the kingdom. The government also, while it interposed for these important ends, was itself

equally interested in the welfare of the institution with which it was so intimately connected in all its financial concerns. It was then struggling through those tremendous efforts against the power of Napoleon, and the bank was to it what the heart is to the human system. Although every assurance was given that this measure was intended to be merely temporary, it was continued from time to time, until May 1, 1823, when the resumption of specie payments took place, for which preparation had gradually been made within the previous 4 years. This was not, however, accomplished without being highly disastrous to many of the most important interests of the country. On the renewal of the charter in 1844, Sir Robert Peel, then prime minister, having become satisfied of the dangerous influence exerted in its ever varying and never stable system, first of expansion, and then of contraction, in its loans, thought to provide a remedy. The principal feature of this measure was to limit the circulation so that it would be regulated by the amount of coin and bullion in the vaults of the institution. Accordingly, he brought in a bill which became a law, on July 19, 1844, entitled: "An act to regulate the issue of bank notes, and for giving to the governor and company of the bank of England certain privileges for a limited period." The following abstract of parts of that law will give an idea of such provisions as refer to the bank of England: § 1. Provides for "the issue department of the bank of England," which shall provide the notes payable on demand, and shall, from Aug. 31, 1844, be kept wholly separate and distinct. § 2. Provides, that on Aug. 31, 1844, the bank shall transfer to the issue department, securities to the value of 14 millions, the debt due by the public to be deemed part; that the banking department shall transfer to the issue department all the gold coin and gold and silver bullion not required; that the issue department shall deliver to the banking department such an amount of notes as with those in circulation shall equal the securities, coin, and bullion, transferred to the issue department. That the bank may not increase but may diminish the amount, and again increase it to any sum not exceeding 14 millions. § 3. Provides, that the bank shall not retain in its issue department at one time, silver to any amount greater than one-fourth the gold held at the same time. § 4. Provides, that notes may be demanded for gold bullion at the rate of £3 17s. 9d. per oz. of standard gold. § 5. Provides for a weekly statement of the affairs of the bank. § 6. Provides, that the bank shall be exempt from stamp duty on their notes. § 7. Provides, that the bank shall allow £180,000 per annum out of the amounts payable by government for the exclusive privileges of banking. § 8. Provides, that the public shall receive such profit as may be obtained by an increase of circulation beyond the amount provided by section 2. § 9. Provides, that no other banks of issue be allowed

but such as were in existence May 6, 1844.

§ 11. Provides that no banker in England, or Wales, shall issue any bill of exchange or promissory note payable on demand, excepting such bankers as were in existence May 6, 1844. That no company now consisting of 6 or less than 6 partners, shall, if they exceed that number, be allowed to issue notes. The important provisions designed by this act were that the bank might issue £11,000,000, for which the public debt due the bank should be security, and £3,000,000 on exchequer bills and such other government securities as it might hold, but that for every pound sterling issued beyond the £14,000,000, the bank should hold an equal amount in gold and silver. An examination of the operations of the bank will, we think, demonstrate the fact that Sir Robert Peel entirely misapprehended the causes at work in producing the fluctuations of the currency, and that he applied the restrictions to that particular branch which varied but little in a series of years. The real cause of trouble was to be found in the loans which have been almost always irregular, and at times productive of great injury. This injury has not alone been confined to Great Britain, but in a greater or less degree to every country with which intimate business relations existed. That this act has had no effect in mitigating this crying evil, will be clearly seen in the fact that these fluctuations have never been more violent than since its passage. The British public has for 50 years shown entire confidence in the circulating medium, and no legislation to effect this object was necessary. Within the 18½ years which have elapsed since its passage, the operation of this law has twice been suspended, as doubtless it will be again whenever it is rendered necessary so to do. The first of these was on Oct. 25, 1847. The other on Nov. 12, 1857, although within rather more than 80 days prior to the last-named suspension, the rate of discount had been advanced from 6 per cent. to 10 per cent. per annum, without producing the hoped for relief. The position of the bank in Nov. 1857, at the moment at which the government interposed, was critical in the extreme, as will appear from the following statement of Nov. 11, the day prior to the receipt of instruction from the prime minister and the chancellor of the exchequer, to wit:

ISSUE DEPARTMENT.

Notes issued.....	£21,141,065	Government debt.....	£11,015,100
		Other securities.....	3,450,900
		Gold coin & bullion....	6,666,065
	£21,141,065		£21,141,065

BANKING DEPARTMENT.

Proprietors' capital.....	£14,558,000
Reserve.....	8,264,356
Public deposits.....	5,214,650
Private ".....	12,925,844
Seven days and other bills.....	853,075
	£37,090,494

Government securities, including dead weight annuities.....	£29,444,539
Other securities.....	26,118,453
Notes.....	957,710
Gold and silver coin.....	504,448
	£37,090,494

Thus the bank had of gold and silver coin £504,448, and a reserve of notes to the amount of £957,710, with which to meet liabilities amounting to £19,103,078, and that at a time when there was a large export demand for gold, and England was in a state of "crisis." While the notes are a legal tender elsewhere they are not such with the bank for the payment of its debts. By the provision of the charter act of 1844, it will be observed that the gold and silver coin in the issue department, amounting to £6,666,065, was entirely unavailable to the bank, and beyond the control of the banking department. Prior to the establishment of the bank of England, banking in London was conducted first by the Jews, who were succeeded by the Lombards, who were in turn supplanted by the goldsmiths. The latter lent money at rates much below those charged by their predecessors, and they issued promissory notes payable on demand, or at a certain period after date. These bankers deposited their funds at the royal mint in the tower of London. This practice was discontinued when Charles I. being in want of money seized the amount thus deposited, £200,000, by which means the bankers were utterly ruined. During the civil war the business of the goldsmiths largely increased, and during the commonwealth, as well as subsequently, various plans were devised by different individuals for the establishment of public banks. No action was, however, taken to mature and carry out these plans until the establishment of the bank of England. After the seizure of the funds by Charles I., it was the practice of the goldsmiths to deposit their surplus means in the exchequer, which funds were drawn once a week, to meet such demands as might be made upon their owners. Charles II. in 1672, being in want of money, closed the exchequer, and seized the funds belonging to the goldsmiths, amounting to £1,828,562, on which there accrued 25 years' interest, making thereby a sum total of £3,321,818. No consideration was given for any part of this large sum, except £664,268, for which government loan was issued—forming the basis of the present national debt of Great Britain. As may readily be imagined the goldsmiths were ruined irretrievably by this infamous proceeding.—The earliest country bank established in England of which there exists any record, was at Newcastle-on-Tyne, in the year 1755. This was a bank of issue. From that period the number of these institutions increased. On the renewal of the charter of the bank of England in 1708, the bank obtained the privilege of banking to the exclusion of all copartnerships of more than 6 persons. In consequence of this law, the various joint stock banks in existence at the time were compelled to wind up their affairs.

In the year 1825, however, an act was passed allowing copartnerships of more than 6 persons to carry on business in England as bankers, 65 miles from London, with the provision that each stockholder should be liable for the entire debts of the bank. Notwithstanding the provisions of this law, which would seem to prevent any joint stock bank being established within 65 miles of London, in 1834, the London and Westminster bank was founded, and has been in successful operation ever since, although not without having troubles to encounter. Litigation with the bank of England, and other difficulties, at first beset it, but through all of these it passed, and has met with high success. Since the establishment of this institution, various others of the kind have been founded in and about London. By the issue act of 1844, no bank in any part of the United Kingdom which did not on May 6, 1844, issue notes, was allowed thereafter to exercise that privilege. By an act passed during the same year, with reference to joint-stock banks in England, so many restrictive clauses were introduced, as practically to prevent any new institutions of the kind from being established. Within a recent period, however, the passage of a new act more liberal in its provisions has recognized limited liability. Perhaps nowhere in the world does the history of banking show greater instability than in England, where during the last half century joint-stock banks have failed by scores. Their profits have in many instances been very large, but their risks being correspondingly great, their failures have been most disastrous.—Greater freedom has always existed in Scotch banking than in that of England, and consequently there has been greater security—those institutions, unlike the great monopoly, trading upon their own capital. The earliest bank established was the bank of Scotland, founded in 1695; followed in 1727 by the royal bank of Scotland, in 1746 by the British Linen company, in 1810 by the Commercial bank, and in 1825 by the National bank. In addition to these, joint-stock banks with limited liabilities have been allowed freely to be established. These banks have passed readily through commercial crises which have destroyed large numbers of such institutions in England.—Various attempts to establish a public bank in Ireland were from time to time made, and meeting with opposition in the Irish parliament, were defeated. It was not until the year 1782 that a bill was passed incorporating the "governor and company of the bank of Ireland," which institution commenced business in Dublin, June 1, 1783, and is still in successful operation. This was succeeded in 1808 by the Belfast bank, in 1825 by the Hibernian bank of Ireland; and the Provincial bank of Ireland in 1834, by the National bank, and others, all of which are joint-stock banks.—*The Bank of France.* In the year 1716, a bank was founded in Paris under this name, which was 2 years subse-

quently changed to the Royal bank. Under this organization it remained until 1803, when having been unsuccessful, it was placed upon its present organization as the bank of France, with a capital of 70,000,000 of francs, which was in 1806 increased to 90,000,000 of francs. It is a bank of deposit, discount, and circulation; issuing its own notes, of denominations of not less than 500 francs, payable on demand, having an exclusive monopoly of this privilege for the entire country. It is a public institution, the government appointing a governor and 2 deputy governors, all of whom must be stockholders in the bank. The affairs of the institution are managed by a council-general of 20 members, who are elected by 200 of the principal stockholders. No bills are discounted having more than 8 months to run before maturity, and as a general thing must be guaranteed by 3 approved signatures, though in some instances 2 are accepted. The governor annually makes a report of the condition of the affairs of the bank, with statements in detail of its issues, assets, loans, and other particulars. The annual dividends are limited to 5 per cent.; all profits over and above that amount, being invested in 5 per cent. consolidated stock, to be divided among the stockholders at the expiration of the charter. It has branches at Rouen, Nantes, St. Etienne, Rheims, and other towns.—*Belgian Banks.* The oldest of these is the *Société Générale*, founded Aug. 28, 1833, capital 50,000,000 florins. It was a bank of discount, and managed the finances of the government; after the separation of Belgium from Holland, when it resigned that function to the bank of Belgium. This institution, organized originally with a capital of 20,000,000 francs, expanded its operations so ruinously that in 1838 it was compelled to suspend payments, a difficulty out of which it was extricated by the government. However, in 1839, it stopped again. In 1841 its capital was increased by 10,000,000 francs the subscribers to the new stock receiving 1 per cent., while the old stockholders were to have but 4. In addition to this rate of interest the bank has paid a semi-annual dividend. In 1850 it had charge of the affairs of the government, when it resigned them to the National bank, founded May 5, 1850. This institution, which is a joint-stock bank, without any but a business connection with the government, has a capital of 25,000,000 francs. It is a bank of deposit and exchange, and is allowed to issue notes to 8 times the amount of the coin in its coffers. In this bank the *Société Générale* had 10,000,000 of the capital, and the bank of Belgium 15,000,000, both agreeing to cease their issues of notes, and abandon their discount business.—*German Banks.* In Germany banks of issue were not originally called forth by the necessities of commerce, but by certain crude theories of government prevailing during the last century. Banks were considered as an arcanum or patent medicine, to create wealth and prosperity from naught. The first German

bank, the city bank of Vienna, established in 1705, originated in the wild theories which a few years later, were put into practice on a gigantic scale by Law. It failed during the Napoleonic wars, leaving an incredible amount of utterly worthless notes. Its successor, the Austrian national bank, was established in 1819, principally to regulate the paper issues of the government. Enjoying the exclusive privilege of issuing paper money in Austria, yet it was obliged to suspend specie payments in 1848.—This suspension is still in force, but Jan. 1, 1859, has been fixed as the time of resumption of specie payments. The royal Prussian bank was founded by Frederic I. in 1765, with a view of promoting commerce, but so small were the real wants of the commercial community that the bank was obliged to lend money upon bond and mortgage. During the Napoleonic wars it was also compelled to suspend payments. Even the Hanse towns, the principal seaports of Germany, had no banks of issue up to the middle of the present century. At Munich a bank of issue was established in 1834, but the business of the place was so small that the funds of the bank had to be invested on bond and mortgage. The creation of the Zollverein having largely increased the commercial movement of northern Germany, a bank was established at Leipzig in 1839, which remains in a flourishing condition. In Prussia the Royal bank was changed into a joint stock bank (1846), the government reserving to itself the lion's share of the capital stock (10,000,000 thalers, of which government held 1,200,000). This bank was authorized to issue 21,000,000 thalers in notes. At the same time a bank of issue was established in the small duchy of Anhalt-Dessau (capital 2,000,000 thalers).—In 1848 the Prussian government allowed the formation of provincial banks, their capital not to exceed 1,000,000 thalers in each case, and the aggregate note issue of them all not to exceed 7,000,000 thalers. This restriction has neutralized the law entirely, only one bank having been established in accordance with it (*Berliner Kassenverein*, 1850). The illiberal policy of Prussia induced the governments of the neighboring smaller states to authorize the establishment of joint stock banks. In 1853 such banks were established at Brunswick and Weimar, 1854 at Frankfurt, 1855 at Darmstadt and Gera, 1856 at Sondershausen, Meiningen, Luxemburg, Gotha, Lubeck, Bremen, Hanover, and Bückeburg. This competition at last broke the resistance of the Prussian government, and 7 provincial banks of issue were chartered in consequence, viz.: at Cologne in 1855, at Magdeburg, Königsberg, Dortmund, Posen, Dantzic, and Hagen in 1856 and 1857. By an act of May 7, 1856, the Prussian bank was authorized to increase its capital 5,000,000, while at the same time it obtained the privilege of an unrestricted paper issue, subject to the condition of keeping a specie reserve equal to one-third of the entire issue, and two-thirds in good commercial paper.

Since that time it has increased its circulation to about 60,000,000 thalers. The entire banking system of northern Germany, as it has been developed since 1850, appears to be a continuous feud between Prussia and the surrounding smaller states. In Feb. 1858, the number of banks of issue in Germany was 35; the 36th (at Oldenburg) being just now on the point of going into operation. Of banks of discount without any paper issue, there are 5, representing a capital of 40,500,000 thalers, and holding deposits, in Dec. 1857, to the amount of 17,000,000 thalers. The 36 banks of issue are distributed among 22 states, Lubeck and Brunswick having two each, Saxony three, and Prussia eleven. Of the larger German states Würtemberg, Baden, and Hesse-Cassel have no banks at all. One of the 36 banks is the Austrian one, having a capital of 103,500,000 florins, and 897,000,000 florins in irredeemable notes outstanding, at the close of 1857. The Zollverein states have 31 banks, and the other German states, exclusive of Austria and the Zollverein, 4. The proportion of banks to the population in Germany, exclusive of Austria, is 1 to 1,000,000 inhabitants (in Scotland it is 1 to 166,000; in England 1 to 77,000). Of 9 banks no public statements have as yet appeared. Dividing the remaining 26 banks into 3 classes (viz., 1, the Prussian banks; 2, those the operations of which are in the main confined to their respective states, namely, Bavaria, Saxony, Hanover, Mecklenburg, Frankfurt, Lubeck, and Bremen; 3, those in the smaller states, intended to compete with the banks of the larger ones, namely, 5 in the Thuringian duchies, and respectively at Luxemburg, Darmstadt, Homburg, Dessau, and Brunswick); their condition on Oct. 1, 1857, is shown in the following table:

	Capital.	Circulation.	Specie.
Class 1. 8 banks.....	23,500,000	75,945,000	89,753,000
2. 8 banks.....	27,200,000	17,063,000	11,287,000
3. 10 banks.....	32,500,000	18,000,000	7,329,000
Total, 26 banks.....	83,200,000	111,008,000	58,319,000

	Proportion of specie to 100 thalers of circulation.	Circulation and deposits.	Proportion of specie to circulation and deposits.
Class 1. 8 banks.....	50	112,100,000	35
2. 8 banks.....	66	29,406,000	38
3. 10 banks.....	40	21,205,000	34
Total.....	51	162,750,000	36

The proportion of note circulation to the population is: in Prussia, 4½ thalers to every inhabitant; in all other German states not quite 2 thalers (in Great Britain 10, in France 4½ thalers). The discounts of the 8 Prussian banks, in Oct. 1857, amounted to 80,250,000 thalers; of the 8 banks belonging to class 2 (as above), to 20,750,000 thalers; of the 10 banks belonging to class 3, to 18,500,000 thalers. The loans (on pledge of stocks, bonds, and precious metals) were 14½, 10½, and 6 million thalers, respectively. Several of the German banks still continue to lend money upon bond and mortgage, and the Bavarian banks are obliged by law to do so to a certain amount, three-fourths of

their circulation being secured by bond and mortgage. Most of the banks in the smaller German states are permitted to act as stock-brokers, and some of them may be considered as regular stock-gambling concerns. But, as a general thing, all of the German banks, exclusive of Austria, have withstood the financial crisis of 1857 unflinchingly, the excess of their assets over their immediate liabilities having been so great that their ability to pay was never doubted by the public.—*Danish Banks.* The first bank at Copenhagen was established Oct. 29, 1788; capital, 500,000 rix thalers. The notes were a legal tender. In 1745 it ceased to pay specie, and, in 1762-'3, the government borrowed of it 11,000,000 for war purposes. The credit of the bank fell, and, in 1772, the government bought up the shares, but the worth of the notes could not be restored. In 1791 a new bank was organized, but in 1813 its notes had fallen to $\frac{1}{4}$ their nominal value. The government tried another bank, but it, too, failed, and then the business of banking came into private hands, and the national bank was chartered for 90 years. This is a bank of discount, deposit, and circulation, with a capital, in 1847, of about 15,000,000 rix thalers, and branches at Aarhus, Altona, and Flensburg. A second bank, established at Copenhagen in 1829, is said to have been prosperous.—*Russian Banks.* The Lombard, or Russian *Mont de Piété*, established by Catharine II., lends on bullion and jewelry at 5 per cent., charging 1 year's interest in advance; receives deposits and repays them on 2 days' notice; pays interest on deposits left for above a year, with 3 months' notice of withdrawal.—The assignation bank was established in 1768, and closed Jan. 1, 1848. See ASSIGNATIONS.—The loan bank, established in 1768, is similar to the Lombard; lends on pledge of real estate or of serfs; has branches in the governments or provinces, called public charitable boards, as, out of their profits, these branches have to support almshouses in their respective localities.—The bank of commerce, created by the emperor Nicholas, issues notes based on the bullion in the vaults of the government (by virtue of which it was formerly connected with the assignation bank), and also on private specie deposits in its own vaults. The amount of notes issued, however, being controlled by the government, it has been popularly supposed to be out of all just proportion to the amount of the precious metals in hand; but no inconvenience has ever been experienced from this cause. The unemployed funds of the loan bank find a channel through this institution. It also makes advances on merchandise, and has branches in Moscow, Odessa, Riga, Kharkov, Kiev, and, during the fairs, opens offices in Nishnei-Novgorod, and Irbit.—Most important, however, of all, are the rural, or peasants' banks, so called, established between 1840 and 1850, for the use of the peasantry of the crown domains, or the free peasantry. Each bank is under the control of a board of 7 councilmen, elected by the com-

munes from among their own members, with a president, appointed by the ministry of the crown domains. They lend money at 6 per cent., for from 8 to 10 years, on mortgage of real estate.—A national bank was established at Warsaw in 1828, under government guaranty. It issues notes to the amount of 8,000,000 silver roubles, and makes loans on land and to industrial enterprises.—*Turkish Banks.* The Ottoman Bank. Notice of the commencement of operations on the part of this institution at Constantinople, with branches at Galatz, Smyrna, and at Beyrout, was given in the London papers early in the year 1857. In that announcement it is stated that the bank is prepared to issue letters of credit, to collect bills, and negotiate bills of exchange, as well as to transact generally the banking business in its various branches in Turkey in Europe, and Asia, and in the principalities. The Bank of Turkey is a state bank, authority to establish which in Constantinople, with branches in all parts of the Ottoman empire, was granted early in the year 1857. It was then provided that the capital should be £10,000,000, with the obligation to increase it if required. Its government is to be under the supervision of the sultan, the immediate management being in the hands of a governor, appointed by the government, a deputy governor, and 24 directors, 12 of whom are to be named by the government. It is to have the right to perform all the various operations of banking—being a bank of discount, deposit, and circulation—having the exclusive privilege of issuing bank notes, which are to be made a legal tender in all parts of the empire, and receivable by government offices in the payment of all government dues; and are made payable on demand at any of the offices of the institution. It is provided that the bank shall at all times have in its possession a reserve of specie or ingots to an amount equal to at least one-half of its circulation, which shall at no time exceed £11,000,000. Within 15 months after going into operation it is to withdraw from circulation at par all the paper money of the government, which is to be destroyed. For this paper money the government is to give to the bank its 6 per cent. bonds, to an equal amount of which it may make such use as it shall think proper. To provide for the payment of the interest and principal of this debt, the government agrees to assign a certain portion of its revenue to the bank. Upon the completion of the withdrawal of the paper money, the bank engages also to withdraw from circulation certain debased coin, which is to be handed over to the government to be melted and recoined, when it will be returned to the bank. For any deficit arising out of these transactions, the government will issue additional bonds. Every duty pertaining to the collection and management of the revenue will be intrusted to this institution. The foregoing privileges are granted for 30 years, and the govern-

ment may give one year's notice of its intention to discontinue it, in which event it will pay to the bank in full such sums as may be due to it.—Banks also exist in Lisbon, Madrid, Naples, Rome, Stockholm, and various other of the commercial centres of Europe.—

Banking in the United States. The Bank of North America. During the war of the revolution, the congress of the United States experienced great difficulty in providing the requisite means for carrying on hostilities. On May 10, 1775, soon after the battle of Lexington, congress made preparation to issue continental paper—\$2,000,000 of which were put in circulation on June 23 following. From month to month these issues, which in the aggregate reached \$300,000,000, depreciated until eventually they became entirely valueless, notwithstanding the passage of laws making them a legal tender for the payment of debts. On May 17, 1781, a plan of a national bank was submitted to congress by Robert Morris of Pennsylvania, the principal provisions of which were as follows:—The capital to be \$400,000, in shares of \$400 each; that each share be entitled to a vote for directors; that there be 12 directors chosen from those entitled to vote, who at their first meeting shall choose one as president; that the directors meet quarterly; that the board be empowered from time to time to open new subscriptions for the purpose of increasing the capital of the bank; statements to be made to the superintendent of the finances of America; that the bank notes payable on demand shall by law be made receivable in the duties and taxes of every state, and from the respective states by the treasury of the United States; that the superintendent of the finances of America shall have a right at all times to examine into the affairs of the bank. On May 26, congress passed the following: "Resolved, that congress do approve of the plan for the establishment of a national bank in these United States, submitted for their consideration by Mr. R. Morris, May 17, 1781, and that they will promote and support the same by such ways and means, from time to time, as may appear necessary for the institution and consistent with the public good: that the subscribers to the said bank shall be incorporated agreeably to the principles and terms of the plan under the name of 'The president, directors, and company, of the bank of North America,' so soon as the subscription shall be filled, the directors and president chosen, and application for that purpose made to congress by the president and directors elected."—On Dec. 31 following, congress passed "an ordinance to incorporate the subscribers to the bank of North America." The first president was Thomas Willing, and the bank formed a most important auxiliary in aid of the finances of the government to the final conclusion of the war. This institution was incorporated by the state of Pennsylvania, on April 18, 1782. The bank commenced business in Jan. 1782, with a capital of \$400,000,—of

which \$254,000 had been subscribed by the government. In the year 1785, when an ill-feeling had arisen between the government of the state of Pennsylvania and the bank, the former repealed the charter which it had granted in 1782. The bank, however, continued its operations under the charter granted by the general government until in 1787, when it was rechartered by the state of Pennsylvania. It has, from time to time, been rechartered, and now has a capital of \$1,000,000.—The First Bank of the United States. On the organization of the government of the United States under the constitution, Alexander Hamilton, in his masterly report on the finances in 1790, urged upon congress the importance of establishing a bank of the United States. This measure, although it met with vigorous opposition in the house of representatives, passed that body Feb. 8, 1791,—having on Jan. 20, passed the senate with but slight resistance. The following abstract of the 12 clauses of the charter will give an idea of the act: 1. The capital shall be \$10,000,000, to be divided into 25,000 shares of \$400 each. 2. Any person, copartnership, or body politic, may subscribe for such number of shares as he, she, or they may think proper, not exceeding 1,000, except as regards the subscription of the United States. The subscriptions, except those of the United States, shall be payable $\frac{1}{2}$ in gold and silver, and the remaining $\frac{1}{2}$ in certain 6 per cent. stocks of the United States. 3. The subscribers are incorporated under the name and style of "The president, directors, and company, of the bank of the United States," and to continue until March 4, 1811. The bank is authorized to hold property of all kinds, inclusive of its capital, to the amount of \$15,000,000. 4. Twenty-five directors are to be elected by a plurality of the votes cast, on the 1st Monday in January of each and every year, for one year only, and the directors are empowered to choose one of their number for president. 5. As soon as the sum of \$400,000 is received on account of the subscriptions, in gold and silver, on proper notice being given, the bank may be organized. 6. The directors are authorized to choose such other officers, clerks, and servants, as may be necessary for the bank, and shall otherwise manage the affairs of the bank. 7. This clause prescribes the "rules, restrictions, limitations, and provisions" which shall form and be fundamental articles of the constitution of said corporation." 8. If the corporation or any person or persons, for or to the use of the same, shall buy or sell any goods, wares, or merchandise, whatsoever, contrary to the provisions of the act, such person or persons shall forfeit and lose treble the value of said goods, wares, and merchandise, $\frac{1}{2}$ to the United States, and the remainder to the informer. 9. If the corporation shall loan to the government of the United States any sum of money to an amount exceeding \$100,000, or to any state to an amount exceeding \$50,000, or to any foreign prince or state (unless previously authorized

by law), all and every person concerned in any way in causing the same to be loaned, shall for each and every offence, on conviction, forfeit and pay a sum treble the value of said loan or loans— $\frac{1}{2}$ to the informer, and $\frac{1}{2}$ to the United States. 10. Bills or notes of the bank payable in coin, shall be taken in payments to the United States. 11. The president of the United States may within 18 months from April 1, 1791, cause a subscription to be made to the stock on behalf of the United States, for an amount not exceeding \$2,000,000, to be paid out of the moneys which shall be borrowed by virtue of either of 2 certain acts providing for the payment of the debt of the United States, "borrowing from the bank an equal sum to be applied to the purposes for which the said moneys shall have been procured; reimbursable in 10 years in equal annual instalments; or at any time sooner, or in any greater proportions than the government may think fit. 12. That no other bank shall be established by any future law of the United States during the continuance of the corporation hereby created, for which the faith of the United States is hereby pledged." The bank was established in Philadelphia, with branches at different points. The dividends of the bank averaged from 8 to 10 per cent. per annum—being much below those of the bank of North America in previous years; which, in the words of a distinguished writer, now "gradually declined as other banks sprang into existence." In 1808, 8 years prior to the expiration of the charter, application was made to congress for a renewal of the charter, and Mr. Gallatin, the able head of the treasury department, in obedience to a resolution of the senate, reported to congress upon the memorial. Mr. Gallatin proposed some changes in the new act of incorporation, and highly recommended the reincorporation of the bank, for which he gave his reasons in a clear and conclusive manner. Nothing, however, was done. From time to time, the matter was brought to the attention of congress, until (Feb. 5, 1811) a bill was brought forward, but was on Feb. 20, defeated by the casting vote of Vice-President Clinton. The bank was now obliged to wind up its affairs, which was done without at all convulsing the country. Within about 18 months the stockholders had received 88 per cent. on their stock. On eventually winding up the affairs, the assets yielded to the stockholders a premium over and above the par value of $8\frac{1}{2}$ per cent. An application had previously been unsuccessfully made to the legislature of Pennsylvania for the recharter of this institution, with a capital of \$5,000,000.—Second Bank of the United States. During the war of 1812-'15, the government, which was embarrassed for the want of means, had received important aid from the banks. By this means, the banks, with the exception of those in New England, were, in August and Sept. 1814, driven to a suspension of specie payments. The finances of the government were now in a terrible condition, when, on Oct.

6, Alexander J. Dallas was called to the head of the treasury department. Never before had there been greater need of a master mind in that important office. Within less than a fortnight the new secretary communicated to congress a report of extraordinary ability, in which he strongly recommended the establishment of a national bank, as the remedy required again to bring the finances into order. Various plans for a bank were brought forward in congress, which resulted in nothing, until, on Jan. 20, 1815, a bill was passed. This bill was vetoed by President Madison, on the ground that it would not accomplish the objects rendered necessary by the state of the revenue, and the condition of the country. On April 3, 1816, however, a bill for a bank of the United States, which had previously passed the house of representatives, was adopted by the senate, and, receiving the signature of the president, became a law. The corporate title of this institution was "the president, directors, and company of the bank of the United States." Its capital was to be \$35,000,000, composed of 350,000 shares of \$100 each, \$7,000,000 of the stock was to be subscribed by the United States, and the remaining \$28,000,000 by individuals, companies, or corporations. The charter was to extend to March 3, 1836, and the bank was authorized to organize and commence business so soon as \$8,400,000, exclusive of the subscription of the United States, was paid in. It was prohibited from lending on account of the United States more than \$500,000, or to any state more than \$50,000, or to any foreign prince or power any sum whatever, without the sanction of law previously being obtained.—The bank went into operation Jan. 7, 1817, and through its agency the other banks throughout the country were enabled and induced to resume specie payments.—An unsuccessful effort was made in 1818, to repeal the charter on the ground of alleged mismanagement. President Jackson in his message of Dec. 1829, intimated that "constitutional difficulties" might interfere to prevent its recharter, and expressed the desire that congress might take the matter into early consideration. Committees of both houses reported favorably to a recharter, but no application was made by the bank until the session of 1831-'32. On July 4, 1832, a bill rechartering the bank was sent to the president, who, on the 10th of the same month, returned it with a message stating his objections. An effort now being made to pass the bill over the veto of the president, but without success, the bank on March 3, 1836, ceased to act under the charter granted by the United States, but was in the same year rechartered by the state of Pennsylvania, with the same capital it had previously held.—On Oct. 9, 1839, the bank of the United States suspended specie payments for a second time, having previously suspended in 1837, a measure which was adopted immediately by all the banks throughout the state of Pennsylvania and eventually, with comparatively limited ex-

ception, throughout the country. On Jan. 15, in compliance with an act of the legislature, it resumed specie payments—to suspend finally on Feb. 4. On winding up its affairs, after payment of its debts, there remained nothing to its stockholders—the entire capital having been sunk.—The charter of banks throughout the states is wholly in the hands of the state authorities, and there are at present in existence, some 1,400 of these institutions, with their branches. In the New England states, comprising Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut, there were in 1856-'57, 507 banks and branches, with a capital of \$114,611,752. The first bank which went regularly into operation in any of the states was established in the city of Boston, in 1784, where it still exists. In these states these institutions are generally established under special charters—although “free banking” laws have been enacted by Vermont, Massachusetts, and Connecticut. These laws have been in almost each instance a dead letter, comparatively little use having been made of them. An important element in New England banking, and one which is worthy of notice, is what is known as the “Suffolk bank system.” This system was originally established by 5 of the Boston banks for the purpose of collecting the notes of foreign banks, appointing one member of a committee to superintend and manage the operations of the “associated banks.” This committee appointed an agent to receive and credit the amount of foreign money taken by these banks, and to keep an account of the same. All expenses of collection and keeping these accounts, as well as all losses on foreign money, were to be borne by these institutions in proportion to the amount received on deposit by each. The facilities thus granted in the deposit of these funds, and in their redemption, and the operations becoming more extended, the entire management of it was eventually placed in the hands of the Suffolk bank. Each bank made a stipulated deposit, in the aggregate amounting to \$300,000, on which no interest was paid. As by degrees the country banks made their deposits, those of the other banks were from time to time reduced. The Suffolk bank now redeems at par the bills of all New England banks making deposits with it, and through the management of this agency is furnished with a working capital of \$1,000,000, without any further cost than the salaries of the clerks employed in the work. The annual amount of the redemptions made by this institution is about \$350,000,000. The bank of mutual redemption was chartered in 1855, with a view to taking in part the place of the Suffolk bank, but has not yet gone into operation.—In September, 1856, the number of banks in operation in the state of New York was 311, with a capital of \$96,881,301. Banking in this state commenced in the establishment of the Manhattan bank in 1799. The entire country having passed through a period

of disaster under which banks as well as individuals and corporations generally were ruined in great numbers, the legislature of this state was induced to pass in 1829 what was termed “the safety fund system.” The principal features of this experiment were that each bank acting under it should contribute annually a sum equal to $\frac{1}{2}$ of 1 per cent. on its capital to a common fund to be deposited with the treasurer of the state, as a bank fund until it should amount to 3 per cent. on the capital of the banks. Such part of this fund as might from time to time be necessary, was to be applied to the payment of the debts of each and every bank failing, which had contributed to it. Any diminution in the funds by such payments was again to be restored by annual payments as before. The failure of 10 banks with liabilities to the amount of about \$2,500,000, considerably more than the entire fund, caused it eventually to be abandoned. In 1838, what was termed a “free banking” law was enacted, which provided that any individual or association might engage in the business of banking on depositing with the state comptroller the stocks of the United States or of any state, which were equal to 5 per cent. stocks; and bonds and mortgages on real estate worth twice the amount of the mortgages over and above all buildings thereon, and bearing interest at the rate of 6 per cent. per annum. On receipt of such securities, the parties furnishing the same were to receive an equal amount of notes, numbered, registered, and signed. Difficulties having arisen in converting these securities into funds sufficient to redeem the notes, in 1840 the legislature revised the law so that the stocks of either the United States or of New York, or bonds and mortgages, were required as security.—Weekly returns of the condition of the banks in the city of New York are required to be published, and in Oct. 1853, a clearing house was established in that city. “Free banking,” or general banking laws, have also been enacted with varied success, in the following states: New Jersey, Virginia, Indiana, Illinois, Wisconsin, Tennessee, Louisiana, and Alabama. In all the remaining states of the union, except in California and Arkansas, where no banks exist, they are chartered by special acts of the several legislatures. All legislation respecting these institutions in the district of Columbia is under the control of the congress of the United States. In the autumn of 1857, nearly all of the banks from one end of the union to the other suspended specie payments, in a majority of cases to resume within a few months, with but comparatively little loss to either stock or note holders. Among those, however, which were unable to resume was the bank of Pennsylvania, in the city of Philadelphia, with a capital of \$1,875,000, which was compelled to make an assignment in Feb. 1858. The condition of the banks on or about Jan. 1, of each year between 1837 and 1857 inclusive, is exhibited by the following table:

Comparative view of the condition of the banks of the United States, according to returns received to January 1st, 1837, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1854, 1855, 1856, and 1857.

	1837.	1841.	1842.	1843.	1844.	1845.	1846.	1847.
Number of banks.....	634	619	568	577	573	580	587	591
Number of branches.....	154	165	139	114	118	127	120	134
Number of banks and branches.....	788	784	692	691	696	707	707	715
Capital paid in.....	\$290,772,091	\$313,608,909	\$360,771,797	\$228,861,948	\$310,872,026	\$306,045,969	\$196,894,309	\$303,070,622
Resources:								
Loans and discounts.....	525,115,702	380,457,662	323,357,569	254,544,987	264,905,814	288,611,131	312,114,404	310,382,945
Stocks.....	12,407,112	64,311,135	24,585,540	28,890,050	22,838,570	20,356,070	21,486,884	20,183,351
Real estate.....	19,064,451	38,524,444	33,341,938	22,526,307	22,520,563	22,177,270	19,099,000	21,219,565
Other investments.....	10,423,630	11,516,609	8,186,317	13,343,599	12,183,699	10,073,468	7,913,591	12,904,112
Due by other banks.....	59,668,910	47,877,045	30,723,496	20,666,364	33,890,900	29,610,273	31,680,946	31,788,641
Notes of other banks.....	36,383,327	23,643,447	19,462,744	13,306,617	11,672,473	12,040,760	12,914,423	13,112,467
Specie funds.....	3,866,500	3,163,708	3,115,327	6,573,375	6,729,980	6,784,026	8,386,478	13,780,780
Specie.....	37,915,340	34,813,928	28,440,433	33,515,806	40,898,269	44,341,242	42,012,095	33,132,516
Liabilities:								
Circulation.....	149,185,590	107,290,214	88,734,011	58,563,608	75,167,646	89,603,711	105,532,437	105,519,766
Deposits.....	197,397,185	64,890,101	62,408,870	56,168,628	84,550,755	88,020,646	96,913,070	91,792,583
Due to other banks.....	62,421,118	42,861,889	23,863,837	21,456,223	31,993,084	26,237,440	28,218,568	28,589,888
Other liabilities.....	36,560,289	42,896,226	12,775,106	7,307,033	5,842,010	5,583,902	5,381,572	4,706,077
Aggregate of immediate liabilities, i. e. of circulation, deposits, and dues to other banks.....	339,004,123	215,042,204	172,006,708	136,188,754	191,716,455	203,966,797	230,684,065	225,882,187
Aggregate of immediate means, i. e. of specie, specie funds, notes of other banks, and sums due from other banks.....	189,479,377	111,503,158	81,704,090	74,067,062	104,161,622	92,657,300	95,002,942	96,823,404
Gold and silver in United States treasury depositories.....								
Total specie in banks and treasury depositories.....								

	1848.	1849.	1850.	1851.	1854.	1855.	1856.	1857.
Number of banks.....	622	654	685	731	1,059	1,168	1,255	1,283
Number of branches.....	129	138	139	148	149	144	143	193
Number of banks and branches.....	751	792	824	879	1,208	1,307	1,398	1,416
Capital paid in.....	\$204,533,175	\$207,309,361	\$217,317,211	\$227,807,553	\$301,376,071	\$332,177,288	\$343,874,372	\$370,894,686
Resources:								
Loans and discounts.....	844,476,332	892,832,195	864,204,075	418,766,799	537,397,779	576,144,758	634,183,280	634,456,887
Stocks.....	26,495,054	17,491,809	20,096,759	22,888,959	24,390,380	22,737,032	49,435,315	50,272,339
Real estate.....	20,890,955	37,001,909	20,682,166	20,219,724	22,397,472	24,070,801	20,855,867	24,134,522
Other investments.....	8,229,625	7,965,463	11,949,548	8,983,972	7,559,890	8,734,540	8,892,516	8,930,866
Due by other banks.....	33,904,932	32,228,407	41,681,555	50,718,015	55,516,085	65,785,785	62,689,725	63,489,725
Notes of other banks.....	16,427,716	12,703,016	16,393,289	17,196,088	22,650,066	23,429,518	24,779,049	23,134,008
Specie funds.....	10,459,522	8,680,483	11,093,245	15,841,196	23,579,233	21,393,738	19,007,710	25,081,641
Specie.....	46,269,765	43,619,368	45,379,345	48,671,948	59,410,253	59,944,546	59,314,068	58,949,539
Liabilities:								
Circulation.....	128,500,091	114,743,415	131,566,526	155,165,251	204,689,207	180,659,938	195,547,930	214,778,892
Deposits.....	103,276,023	91,178,623	100,256,126	123,967,712	158,567,712	183,753,144	213,705,602	209,351,353
Due to other banks.....	39,414,371	30,095,866	36,474,471	40,328,212	45,154,067	52,719,064	57,674,333	57,674,333
Other liabilities.....	6,601,461	6,106,307	6,303,609	6,438,267	13,439,276	15,599,028	12,237,867	19,316,500
Aggregate of immediate liabilities, i. e. of circulation, deposits, and dues to other banks.....	271,146,899	246,017,461	274,640,731	305,899,480	416,848,262	432,737,032	467,175,529	501,140,078
Aggregate of immediate means, i. e. of specie, specie funds, notes of other banks, and sums due from other banks.....	112,101,828	97,356,274	114,917,704	139,946,243	181,800,549	169,609,562	177,000,517	177,000,517
Gold and silver in United States treasury depositories.....								
Total specie in banks and treasury depositories.....								

BANK, in law, the bench or seat upon which the judges sat; in old English law applied to the court itself (see *BENCH*). The term is still used to some extent to express a session of the judges of a court to hear arguments upon questions of law. Days in bank were certain stated days for the appearance of parties, the return of process, &c.

BANKES, SIR JOHN, an English jurist, lord chief-justice of the common pleas in the reign of Charles I., born at Keswick, in 1589, died Dec. 28, 1644. He left the university of Oxford before taking his degree, and applied himself in London with the greatest assiduity to the study of law. After filling smaller offices, in 1634 he became attorney-general, and received the honor of knighthood. In 1640 he succeeded Sir Edward Littleton as chief-justice of the common pleas, and was distinguished for his loyalty to the king during the times of the revolution. In 1642 he was created doctor of laws by the university of Oxford, and admitted into the king's privy council. At the outbreak of the civil war he pronounced the conduct of the parliamentary generals treasonable. The parliament in turn immediately declared him and his associate judges traitors, and sent a force to attack his residence, Corfe castle, in the isle of Purbeck, which was courageously and successfully defended by Lady Bankes with her servants and retainers. Sir John Bankes had a high reputation for legal learning, and upon his death was buried in the cathedral of Christ church, Oxford.

BANKES, WILLIAM JOHN, an English politician and writer, died at Venice, April 15, 1855. He was a graduate of Cambridge, and from 1810 to 1812 a member of parliament for the borough of Truro. In 1822, he was returned for the university of Cambridge, but lost his seat on the next election. Subsequently he represented the borough of Marlborough and the county of Dorset. He accused Mr. Joseph Silk Buckingham of having, in his book on Palestine, pirated notes and drawings which he (Bankes) had made during his journey in that country. Mr. Buckingham prosecuted him for libel, and Bankes was sentenced to pay damages to the extent of \$2,000. In the latter part of his life he resided much at Venice, and translated from the Italian "The Narrative of the Life and Adventures of Giovanni Finati," &c., which was published in 1880.

BANKRUPT (Lat. *bancus*, a bench, and *ruptus*, broken). As early as the Norman conquest the term *bancus* or *banc* was used to express a bench, table, or counter, upon which goods were exposed for sale or money for exchange, whence the term bankrupt became the designation of a trader who had been broken up in business. It afterward was applied in a legal sense to a person committing certain acts specified in the English statutes relating to bankruptcy. In its more ordinary acceptation, bankruptcy, however, expresses inability to pay one's debts, being in that sense the same as insol-

veny. But the condition which is made the basis of proceedings under the bankrupt laws is peculiar. The English system has no other interest to us than what arises from our commercial relations with Great Britain, which would hardly justify an elaborate exposition of all its details in a work of this kind. After two experiments made in this country, which will be subsequently referred to, it has been thought that a national bankrupt law cannot be made permanent. The insolvent laws of the several states substantially answer all the exigencies of debtors, though differing from the bankrupt laws of England in lenity to the debtors and facility and inexpensiveness of the relief afforded. The theory of bankruptcy in England is that it is a criminal offence, and the proceeding is in form hostile to the party charged with being bankrupt. The first bankrupt law was enacted in the reign of Henry VIII., in which act the persons amenable to its provisions are described as "those who obtain other men's goods on credit, and then suddenly flee to parts unknown, or keep house, and there consume their substance without paying their debts." In subsequent statutes the character of the bankrupt was defined with more precision, and by the term is now understood a trader who shall do certain acts specified in the statutes which are declared to constitute bankruptcy. Among the acts so specified, the most material are: leaving the country under suspicion of doing so to avoid payment of debts; keeping concealed so that process cannot be served; making a fraudulent disposition of property; imprisonment 21 days for debt; a petition as an insolvent in the insolvent debtor's court; making a general assignment for the benefit of creditors, even if it be without fraud. An act of bankruptcy having been committed, a commission may be issued upon the petition of a creditor, who is thereafter in the proceedings called a petitioning creditor. Under the commission proof is taken before one of certain officers designated as commissioners of bankruptcy, and upon an adjudication of the sufficiency of the proof, assignees of the estate of the bankrupt are appointed, being chosen by the creditors, with an additional one appointed by the court. The decision of the commissioner is subject to review in a court of review in bankruptcy, from which court an appeal lies to the chancellor, and thence to the house of lords. The bankruptcy, when established, relates back to the time when the act of bankruptcy was committed, and the assignees will take all the estate which the bankrupt had at that time, all transactions by him subsequent thereto being held void except in favor of parties who have dealt with him without notice of the act. Ample power is given to the assignees to compel a discovery of property by the bankrupt, and his refusal to make such discovery, or to surrender property when discovered, is declared to be felony, and subjects him to transportation for life. The estate so held by the assignees is for

the benefit of all the creditors of the bankrupt. An allowance is made to the bankrupt for his support, while the proceedings are going on, and if he makes a full surrender of all his property to the assignees, a certificate of conformity is usually granted to him, being a testimonial of his having complied with all the requisites of law; the consent, however, of a certain proportion of the creditors is necessary, viz.: three-fifths in number and value, or nine-tenths in number. The effect of the certificate is to discharge his person and future estate from all debts which might have been proved under the commission, and also to entitle him to a certain percentage as an allowance when the dividend on his estate amounts to 10 shillings in the pound. The official assignee, that is to say, the assignee appointed by the court, is entitled to receive the proceeds of the bankrupt's estate, and is directed to pay the same into the bank of England to the credit of the accountant-general of the court of chancery. The existing laws are embodied in the 2 statutes 6 George IV. and 1 William IV.—In France, the tribunal of commerce proceeds summarily to sequester the estate of a bankrupt merchant, and apply the same in payment of his debts. From the day of failure the bankrupt is divested of all title to or control over his property; his counting-house is closed, and his effects put under seal; a member of the court is appointed a commissioner to take charge of the effects with the aid of certain agents, who have surveillance of the same until the creditors are convened for the nomination of syndics (trustees); and the debtor himself in the mean time may be imprisoned or compelled to give security to undergo examination in respect to his property. The family of the bankrupt are entitled to retain their apparel and household furniture; the wife, also, retains the interest belonging to her by a marriage stipulation, or which she has herself acquired by the use of her own separate estate. The proceeds of the bankrupt's estate are distributed by the syndics to the creditors; the bankrupt is subject to imprisonment, or to be condemned to forced labor, according to the measure of the fault he has committed.—There are similar proceedings in all the commercial countries of Europe, some more and some less severe, but all of them being founded upon the presumption of fraud having been committed by the bankrupt, from which he is to purge himself upon a strict investigation of his affairs. In Holland he is discharged from all further liability for his debts upon getting a certificate from one-half of his creditors, to whom is due five-eighths of his debts.—In the United States, power is given to the federal government to pass bankrupt laws (Const. Art. i., § 8). It has been held by the U. S. courts, however, not to exclude the power of the several states to pass insolvent laws; and these laws, so long as congress does not exercise the power given to it, are binding upon the citizens of the state in which such law is enacted, and as to citizens of other

states who shall come in under the insolvent proceedings or accept a dividend from the insolvent's estate. The only difficulty in giving full effect to the insolvent law, arose under another clause of the constitution of the U. S., prohibiting any state from passing laws impairing the obligation of contracts (Const. Art. i., § 10). As to discharging the person from imprisonment, no doubt ever existed, as that related to the remedy, and not to the contract itself; but in respect to discharging the debtor's future acquisitions, it was long agitated until the doctrine above stated was finally settled by the supreme court in the case of *Ogden v. Saunders*, 12 Whea. A bankrupt law was passed by congress April 4, 1800, and repealed by act of Dec. 19, 1803. Another law was passed Aug. 19, 1841, which was also repealed in 1843. In the first of these the term bankrupt was used as in the English statutes, and the proceedings prescribed were similar; but in the later act the bankrupt was not dealt with as having committed a criminal offence, but was rather regarded in the same light as an insolvent is in the state insolvent laws. Indeed, the bankrupt act of 1841 might more properly have been termed a general insolvent law, and serious objections were raised to the validity of the law upon the ground that the power of congress was limited to passing laws in relation to bankruptcies, and that there is a distinction between bankruptcy and insolvency, the former being quasi-criminal, and the proceeding being hostile to the debtor; the latter proceeding being intended for his relief.

BANKS, EDWARD, a German politician, born in Hamburg in 1794, died 1851. He served against Napoleon; was secretary of the Hamburg senate in 1826, and syndic in 1837; was repeatedly ambassador at London and Frankfort; represented Hamburg in the princes' college at Berlin in 1850; and in 1851 in the diet of Frankfort.

BANKS, JOHN, British dramatist. He lived in the latter part of the 17th and the early part of the 18th century, but the dates of his birth and death are unknown. He was a London attorney, and sacrificed his profession to strive for literary reputation. He published 7 tragedies, between 1677 and 1696. Of these, the "Unhappy Favorite," founded on the fate of the earl of Essex (beheaded in the reign of Elizabeth), was a stock-play for a long time, until it was superseded by dramas on the same subject; one by James Ralph, having been published in 1731; a second by Henry Jones, appearing in 1753; and a third by Henry Brooke, in 1761. The writers of these plays freely availed themselves of Banks's earlier production. The dramas of Mr. Banks were popular, from their good "situations" and stage effects, but their literary merit is small. Baker says, in the *Biographia Dramatica*, "his verse is not poetry, but prose run mad." Sir Richard Steele, who describes his language as giving alternate specimens of meanness and bombast, with occasional nature and pathos, says, "the value

of his works as acting plays, is very considerable."

BANKS, JOHN, who was born in 1709, and died in 1751, was an author by accident. While a weaver's apprentice at Reading, he broke his arm, which disabled him from pursuing his trade. Repairing to London with £10, the gift of a relative, he commenced bookselling in a small way. The loss attending the publication of the "Weaver's Miscellany," drove him to seek employment with a bookbinder, named Montague. While in his service he wrote some indifferent poems. Subsequently he assisted in editing a life of Christ; wrote a successful review of a life of Oliver Cromwell, and published a number of articles in the "Old England" and "Westminster" journals.

BANKS, SIR JOSEPH, an English naturalist and traveller, born January 4, 1748, died June 19, 1820. After 4 years residence at Barrow school, he removed to Eton, where, at the age of 14, he first showed a taste for botany, which he cultivated with enthusiasm and success during his residence at Oxford. He graduated here, and, in 1764, at the age of 21, came into his paternal property, which was considerable. Two years later, he became fellow of the royal society, after which he made a voyage to Newfoundland, with Lieut. Phipps, of the royal navy, to collect plants. On his return, he commenced an intimacy with Dr. Solander, a Swede, the pupil of Linnæus. The 4 years following Dr. Banks devoted to the study of botany and natural history, and, through the interest of the Earl of Sandwich, who was then first lord of the admiralty, was appointed (in conjunction with Dr. Solander) naturalist to the expedition under the command of Captain Cook, which sailed from England, August, 1768, to visit Otaheite for the purpose of observing the transit of the planet Venus over the disk of the sun. In his voyage, which lasted 8 years, he visited Terra del Fuego and Otaheite, as well as New Zealand and New South Wales. He was warmly received on his return, had a long audience with George III., and prepared to go on a second voyage, but was so thwarted by one of the navy officials, that he abandoned the idea. In 1772, he made a voyage to Iceland, with Dr. Solander, visiting the Hebrides on his return, and discovering the columnar stratification of the rocks surrounding the caves of Staffa. On the retirement of Sir John Pringle from the presidency of the royal society, in 1777, Mr. Banks was elected his successor,—a position which his knowledge of science, personal intimacy with influential persons, and ample means, enabled him to hold advantageously for the public. In 1779 he married, and was created a baronet in 1781. Soon after, on the sudden death of Dr. Solander, he abandoned his purpose of publishing the results of his observations and discoveries in botany. In 1784, an attempt to remove him from the royal society, on the pretext that he usurped too much power, was unsuccessful. After this, he recovered his popularity. In

1795 he received the order of the Bath, in 1797 he was made a privy councillor, in 1802 he was chosen a member of the national institute of France. In his latter years, Sir Joseph was a martyr to the gout. He was in his 78th year when he died. It has been much regretted that, except in brief memoirs or occasional communications to the transactions of societies, he made public no account of his large collections of natural history. He published a small work on "Blight, Mildew, or Rust in Corn," and another on "Merino Sheep." He dispensed his large fortune with noble liberality, silently relieving the distresses of many a man of science.

BANKS, NATHANIEL PRENTISS, governor of Massachusetts, and late speaker of the U. S. house of representatives, born in Waltham, Mass., Jan. 30, 1816. With no other opportunities of early education than the common schools of New England, he was placed, as soon as he could be of service, at work in a cotton factory, in his native village, by his father, who was the overseer, and afterward learned the machinist's trade. Literary aspirations came upon him in connection with the representations of a dramatic company formed among his associates, with whom he played the principal parts with such promise as to have had inducements offered him to adopt an actor's career by profession. Choosing, however, another stage, he lectured before political meetings, lyceums, and temperance societies, and afterward became editor of the village paper of his native place. Entering thus upon the field of politics, he received an office under the Polk administration in the Boston custom-house, and was in request in the democratic party as a speaker at their political meetings. He was elected to the house of representatives of Massachusetts for 1849, and is entered on the roll of members as a "machinist." The next year he appears as a lawyer. In 1851, he was chosen speaker of the house as one of the prominent advocates of the "coalition" between the democrats and the freesoilers, by which the ancient rule of the whigs was overthrown in Massachusetts. He was again elected the following year by the same coalescing vote, and also representative to the ensuing congress. In the summer of 1853, he was president of the convention called to revise the constitution of the state. During his first term, having withdrawn from his adhesion to the democratic party, and voting against the passage of the Kansas Nebraska bill, although he voted for taking it up, he was reelected to congress in 1854, with the support of both the "know nothing" or American and republican parties, and at its meeting in December, in consequence of his high reputation as a presiding officer, adopted as the candidate of the latter for the speakership, and elected by a plurality vote after a contest of more than two months, and over a hundred ballots for a majority as required by the standing rules of the house. But at the close of this congress a handsome vote of thanks

was passed upon the generally acceptable manner in which the more than ordinarily difficult duties of that position had been performed. He was a member of the next congress, and nominated in separate conventions of the American and republican parties for the office of governor of Massachusetts, to which he was elected in November, 1857. He has been less distinguished in debate, than as a presiding officer. His merits in deliberative assemblies are very high; an accurate acquaintance with parliamentary law, ready attention, and quick decision, enabling him to expedite business, and control aimless discussion.

BANKS, THOMAS, English sculptor, born at Lambeth, Dec. 22, 1735, died in London, Feb. 2, 1805. Originally a pupil of Kent, the architect, he taught himself to carve wood and stone. In 1760 his models obtained high praise from Sir Joshua Reynolds, and gained for him several prizes from the society of arts. The royal academy was founded in 1768, and Mr. Banks won the gold prize from numerous competitors in 1770. Two years later he was sent to Rome, as the academy's foreign student. A group of Mercury, Argus, and Io, had previously established his reputation. In Rome he studied from the antique, and produced several groups, among which was "Oaractacus pleading before Claudius," and "Psyche and the Butterfly." In 1784, he went to St. Petersburg, on the invitation of the empress Catharine, who purchased his Psyche. Dissatisfied with the people and climate of Russia, he again opened a studio in London, and there completed what is perhaps his finest work, the figure of the "Mourning Apollo," now in the hall of the British institution. It was on its way to the exhibition of the royal academy, when Banks saw it overturned in the wagon and broken to pieces in the street. A year's labor was gone, and with it his hope of fame. Instead of grieving over the misfortune, he returned home, and with his brother's assistance restored the cast, which was of plaster. It was exhibited, and did not meet with a purchaser, but obtained him several orders. Elected a member of the academy, he presented to that institution a fine figure of a fallen Titan. His most popular work (now in the parish church of Ashbourne, Derbyshire) was a monument representing the infant daughter of Sir Brooke Boothby. She is placed as if sleeping on her bed, and is exquisite in execution and expression. Mr. Banks's last works were public monuments in St. Paul's cathedral, and by no means worthy of his genius. He was the first, perhaps, of the purely ideal and intellectual sculptors of England.

BANKS, THOMAS CHRISTOPHER, an English genealogist, born 1760, died 1854. A lawyer by profession, Mr. Banks applied himself earnestly and successfully to the study of genealogy, and was useful, from his information on such matters, to several claimants of peerages in abeyance or generally supposed to be extinct.

In this capacity he was employed by Mr. Humphreys (Alexander), who claimed the dormant earldom of Stirling, and devoted much time and labor in prosecuting inquiries and obtaining evidences (not only in Scotland and Ireland, but in British North America and the United States) to establish that claim. For these services, he received, in July, 1831, a grant from the "earl of Stirling" of 16,000 acres of land, from the family estates to be recovered in Canada, and a patent appointing him a baronet of Nova Scotia. The lands, thus liberally granted, never came into his possession, but, like the grantee, Mr. Banks assumed the title of Sir Christopher Banks, though the British authorities neglected to acknowledge the validity of the dignity. Some years later, he abandoned the title, being then at variance with the "earl of Stirling," in whose claims, however, he must have had confidence at one time, as he advanced him a large amount of money to prosecute their establishment. (See **ALEXANDER, ALEXANDER HUMPHREYS**.)

BANN, LOWER, a river in the N. of Ireland, flows from Lough Beg, N. N. W. between the counties of Antrim and Londonderry, for 40 miles, and falls into the sea, 4 miles S. W. of Portrush. From the sea to Coleraine it is navigable for vessels of 200 tons; but a number of sandbanks endanger its channel. The eel and salmon fisheries of the Bann are very important.—A small affluent of the Slaney, in the co. of Wexford bears the same name.

BANN, UPPER, a river which rises in the Mourne mountains, N. Ireland, and flows by a N. W. course through the counties of Down and Armagh, till it falls into Lough Neagh, on its S. side. It communicates with the Newry canal, and vessels of 60 tons navigate it to Portadown.

BANNALEC, a town and commune of France, in the department of Finisterre, noted for a fierce battle during the wars of the league between the leaguers and the king's troops. The wrestling matches of Bannalec, held annually during the month of September, enjoy considerable celebrity and attract many spectators. Pop. of the town, 4,372.

BANNEKER, BENJAMIN, a negro mathematician and astronomer, who resided at Elcott's mills, near Baltimore, Md., born Nov. 1, 1731, died in 1804. His maternal grandmother was a white woman, who liberated and married one of her slaves, and from her he learned to read and write. He displayed great fondness for his books, and as he grew to manhood devoted himself in his leisure hours to mathematics, in which he made such progress as to master the most difficult problems in arithmetic, and eventually to calculate eclipses and construct almanacs. He made a wooden clock which kept time very accurately, and he assisted in running the boundary lines of the district of Columbia. He sent a manuscript copy of his first almanac to Thomas Jefferson, then secretary of state, who forwarded it to Condo-

ret, secretary of the academy of sciences at Paris, and in reply wrote Banneker a very complimentary letter. He was employed by Elliott in laying out Washington city. A book of his city calculations is preserved in the Maryland historical society at Baltimore, which association has published two sketches of his life.

BANNER, a military ensign, generally used as synonymous with flag or standard. The banners of the classic ages were square pieces of colored drapery, suspended from a cross or transverse bar, like the yard of a vessel, supported on a staff and usually surmounted by an image, which was the object of adoration to the soldiers. Such was the early ensign or banner of Rome, a square of crimson cloth, bearing the initials, S. P. Q. R. *senatus populusque Romanus*, surmounted by an eagle for the legions, by an open hand for the maniples, or companies. Such was the Christian ensign, the famous *labarum* of Constantine, a cross of gold and jewels, above a splendid banner, bearing the inscription, *In hoc signo vinces*. "In this sign shalt thou conquer." We learn from Xenophon's expedition of Cyrus, that the banner of the kings of Persia displayed a golden eagle, and, in the Bible, we have recorded the devices of the tribes of Israel, but it does not appear that until the invention of heraldry any absolute certainty existed as to the bearings or the colors, whether of nations, crowned heads, or families. —The banner of the middle ages was of a different form, nature, and significance. It, likewise, was square in shape; but instead of being fastened horizontally on a transverse bar, was attached perpendicularly to the staff. As elsewhere, it was a military ensign, and was used as the rallying point of the company of men who fought under it. But it could only be borne by a person of a certain rank, who, in virtue of the right of displaying his square banner, instead of the ordinary swallow-tailed or single-pointed pennons or pennoncelles of knight-hood, was styled a banneret. The bearer of a banner was also one who brought into the field such a number of men—that number being unknown—as entitled them to be commanded by their own leader. For this reason, when the right of displaying his banner was assigned, as an honor or reward of valor, to any poor knight, a grant of land or revenues was added to support it. The banner was charged with the armorial bearings of the leader who carried it; so that it was clearly known of what great houses an army was composed, by their opponents.

BANNERET, an English title of military dignity, now extinct. It must not be confounded with that of baronet, which is much more recent, the first of that order having been created by King James I. in 1611. The banneret was held to be the last among the greater, and the first among the secondary dignities of England; the writs of the early kings, for their military arrays, running to the earls, barons, bannerets, and knights of England; the ban-

neret being the last of the feudal dignitaries, who had the right of displaying his own square banner, and mustering his own men under it.—The banneret was originally a knight, created in the field by the king in person, under his own banner displayed, for the performance of some particularly distinguished service. Such were John de Copeland, created a banneret by Edward III. for taking David Bruce, king of Scotland, prisoner at the battle of Durham; and John Chandos, created banneret by the Black prince, and Don Pedro of Spain; and many others, whom it would be tedious to enumerate. Sometimes, however, this rank was conferred for services, not military, as in the case of William de la Pole, a merchant of Hull, created a banneret by Edward III. and endowed with a grant of 500 marks annual fee, issuing out of the port of Hull, in reward for moneys lent to the king for the supporting his foreign expeditions. This creation was by letters patent of the king; but the dignity conferred was inferior to that of the banneret, dubbed on the field. On the continent, when a person was to be created a banneret, he delivered his swallow-tailed pennoncelle, furled, to the king, who unfurled it, cut off the swallow-tails with his own hand, and returned it to him, a square banner, which thenceforth he had a right to display. When the new banneret was not a person of sufficient landed estate to enable him to call out such a number of tenants as constituted the following of a banner, it was usual to give him a grant which should enable him to support the dignity. It has been held that, in France, every knight, who had such a following as would entitle him to a separate command, was entitled to his banner, and was, *ex ipso facto*, a banneret. In England, it has been supposed that few, if any, tenants of lower dignity than barons could bring enough men into the field to justify their claim to a banner. Sir John Chandos, however, named above, who was not a baron, at any time, but only an adventurous knight-banneret, had under him, when he marched into Navarre with the vanguard of the Black prince, to the aid of Don Pedro—as we learn from Froissart, chap. cccxxvii—"full 1,200 persons, all ornamented with his arms, which were a sharp pile gules on a field argent. It was a handsome sight to behold."—During the English civil wars, Captain John Smith, who rescued the king's banner at Edgehill, was created a banneret; and, so lately as 1797, when Admiral Duncan's fleet was at the Nore, King George III. created Captain Sir Henry Trollope, under whose flag he sailed to review the fleet, a banneret. He is believed to be the last banneret created in England; as was the late Sir Robert Wilson, dubbed by the emperor of Austria for rescuing him by a desperate sally through the republican lines in Flanders, the last created on the continent of Europe.

BANNISTER, WILLIAM B., an American lawyer and merchant, born in Brookfield, Mass., Nov. 8, 1788, died July 1, 1858. He graduated

at Dartmouth college in 1797, after which he studied law, and in 1800 opened a law-office in Newbury, Vermont. In 1807 he removed to Massachusetts, and exchanging the duties of his profession for mercantile pursuits, succeeded in gaining an ample fortune. He took part in public affairs, and was for several years a member of each branch of the Massachusetts legislature. He was deeply interested in behalf of piety and education, and for sixteen years attended to the duties of a trustee of Amherst college, and a visitor of the Andover theological seminary. A cheerful disposition and gentle manners, joined to his integrity of character, made him as highly esteemed in private as in public life. At his death, he left \$40,000 to be divided equally between the American Bible society, American board of commissioners for foreign missions, the American education society, the Massachusetts home missionary society, and the American colonization society.

BANNOCKBURN, a village of Stirlingshire, in Scotland, on a brook, or burn, of the same name, famous for a battle fought between the Scottish patriots under Robert Bruce, and the English invading army, under Edward II. in person, on June 25, 1314. It lies 8 miles S. E. of the fortress of Stirling, and 31 miles N. W. of Edinburgh. The large brook from which this famous battle has its name, falling into the Forth, is itself named from the oaten cakes, or bannocks, which were made in the mills driven by its waters, as we are informed by Holinshed, in his chronicles of Scotland. After the resignation of the crown to Edward I. by John Balliol, and the acceptance of the English monarch as their liege lord, by all the assembled nobility and baronage of Scotland, Sir William Douglas only excepted, in 1296, the Scottish barons soon repented of their lack of spirit, and took up arms to throw off the yoke of England. Taking advantage of Edward's absence in France, they elected 12 governors, among whom the most famous was John Comyn, earl of Buchquhan, and invading Northumberland, laid siege to Carlisle castle, from which, however, they were forced to return, having effected nothing. Shortly after this, however, William Wallace, son of Sir Andrew Wallace of Oragie, was raised to the command of the Scottish armies, and, at first, defeating the English and slaying the regent, Sir Hugh Cressingham, at Stirling, seemed on the point of carrying all before him; when, by the defection of the Comyns and of Robert Bruce, he was so sorely thwarted that he resigned his office and retired to France. In 1302, Edward I. again entered Scotland, at the head of his army, overran the whole country, reduced all its fortresses, and coming to Scone, where he again convened all the Scottish nobility and baronage, who, with the sole exception of William Wallace, all again did homage and swore fealty to him, carried off the stone coronation chair, in which the kings of Scotland were crowned, and conveyed it to Westminster,

where it has since remained. No sooner, however, had he left the country, than the very barons of his own party, especially Bruce and Comyn the Red, began to conspire against him; when the latter, having betrayed the conspiracy, was murdered in the Gray Friars' church, at Dumfries, by Bruce, Lyndsey, and Kirkpatrick; which blood, although foully shed, sealed the liberty of Scotland, since it bound the slayers together by an indissoluble tie, inasmuch as, through it, none of them could look for pardon. Aymer de Valence, Edward's governor in Scotland, however, was a man of energy; by his means Wallace was taken and sent up to London, where he was executed as a traitor; and though Robert Bruce was now crowned king of Scotland, at Scone, being, by the resignation of the Balliols, the true heir to the throne, he was defeated at Methuen; his wife was made a prisoner and carried into England; his brothers, Hugh, Thomas, and Alexander, were taken and executed, and he was himself driven into the Western isles, and reduced to a condition so hopeless, that ultimate success seemed impossible. Still, however, he persevered, and won his way, inch by inch, upward, until his great adversary, Edward I., while advancing to the borders, at the head of the greatest army which had ever entered Scotland, was taken sick and died, as some say at Carlisle, as others at Lancaster, or at Burgh on the Sands, A. D. 1307, in the 69th year of his age, and the 35th of his reign, leaving his kingdom to his weak and impotent son, Edward II.; and having made him swear that he would never assume the crown of England until he should have avenged his father's wrongs and performed the service on which he then was bound; and further, that he would carry with him, wherever he went, his coffin bones, until he should have marched them in triumph through the whole of Scotland. What might have been the effect had Edward of Caernarvon at once proceeded with the host which his father had led so far on his way, to what it considered an unquestionable conquest, is to be doubted; but, as Robert Bruce had as yet no firm foothold in the kingdom, and as many of the nobles renewed their oaths of allegiance to Edward II., the chances of success were strong in his favor. He tarried, however, 6 years, before taking any measures to carry out his father's schemes; at the end of which Bruce had obtained the command of all the strong places in the kingdom, with the one exception of Stirling castle, which held out under Sir Philip Mowbray for the English; and even this must have been surrendered, but for an interposition entered into by Edward Bruce with the garrison, that they should yield themselves, in case of no aid being received by them from England within 12 months. On news of this, Edward was compelled, from shame, to bestir himself; and, issuing his writs of levy and array, he raised all the force of the kingdom, beside, as it is said by the Scottish writers, large auxiliary bands from Holland, Zealand,

Brabant, Flanders, Picardy, Gascony, Normandy, and Guienne. He had, doubtless, a splendid host, with many of the experienced captains and tried warriors of his father—although the numbers attributed to his army by the Scottish chroniclers, are exaggerated beyond the bounds of possibility, when they speak of 150,000 footmen, and almost as many horse, beside the supernumeraries of the army; it being notorious that the whole population of England, at that day, could scarcely have furnished such a number of fighting men, out of all her males, capable of bearing arms. It is not possible to ascertain what was the actual force of Edward's army; but Lingard shows that the infantry raised by the sheriff's writs amounted only to 21,540 men, of whom 14,500 were from the 12 northern counties, and 7,040 from Wales; that the Irish levies seem not to have arrived in time; that the clergy both of York and Canterbury refused their aid; that the earls of Lancaster, Surrey, Warwick, and Arundel, and probably others, neglected the royal summons; and, therefore, that in all likelihood, the feudal cavalry was less numerous than usual in royal expeditions of such magnitude and weight as this. It is not probable, then, at the utmost, that Edward's army could have exceeded 70,000 or 80,000 men, all persons of all arms and conditions included. The Scots, under Bruce, amounted to about 80,000 men, all picked soldiers, Douglas and Stewart commanding the centre, Edward Bruce the left, and Randolph the right wing, all infantry fighting on foot with long spears and axes, except a few hundred men-at-arms on the wings; those intrusted to Edward Bruce having an especial duty assigned to them, which they did well, and which, in fact, decided the battle. In reserve were the Argyleshire highlanders, and the men of the Western isles, who, then, as now, fought bare-breasted, in those days of plate and mail, with no armor to protect their dauntless hearts but the chequered tartans of the Gael; no weapons of offence but their terrible claymores, which have turned the tide of so many a desperate fight. At a distance, ambushed in a valley, lay 15,000 more camp-followers, wagon-drivers, and scouts half-armed, who could not be trusted in the shock of battle, but who were ordered to make a demonstration of advancing, at the crisis of the battle, with a great show of well-known banners, belonging to houses and clans not in the field, and a loud blare of trumpets, so as to convey the impression of a strong reinforcement, in fact a fresh army, coming to the rescue. In addition to all this, the low ground to the right of the Scottish centre, where the English chivalry might be expected to make their final onset, was bored in all directions and perforated by pitfalls, in quincunx, lined with pointed stakes, and by long narrow trenches of many feet deep, covered with hurdles overlaid with earth and greensward, strong enough to endure the march of infantry, but insufficient

to support the weight of the iron charge of the barded horse. On the evening preceding the action, a sharp skirmish of cavalry occurred on the Scottish right wing, in which Randolph had nearly allowed himself to be outflanked and turned; when, Bruce sharply reproving him, he charged with such vigor and determination as to defeat the attempt; although at first his position appeared so desperate, that Douglas, who had asked, on his knees, permission to support his friend and been refused, disobeyed orders, and was rushing, as he supposed, to die with his brother-in-arms, at the head of his own household only, when he met the man, whom he expected to find dead, returning in triumph, having retrieved "the rose, which," in the words of Bruce, "had fallen from his chaplet." Another circumstance added, on that eventful eve, to the courage of the Scots; and tended, perhaps, to depress the spirits of the English, who could not but feel that the Edward who was now at their head, was not the invincible Long Shanks who had led them so often to glory, but never to defeat. While Bruce, as his wont was, surveyed the enemy's front and ordered his own lines, mounted only on a road hackney, and armed only with a battle-axe, or mace-at-arms, a young English knight, Sir Henry de Bohun, of the blood of Herford, rode at him, in full career, with his lance in rest, and his war-horse at his full speed. The fate of the king seemed certain; but he swerved his horse from the shock, and clove the knight to the teeth, through headpiece, hood of mail, and skull, as he was borne ineffectually by him, thus winning the *spolia opima*, and gaining for the Scotch the omen, so much prized by that superstitious nation, of drawing the first blood, which was always held to bind victory to their banners. It is said that the English host spent the night in wassail and revelry, while the Scots passed their hours of darkness in penitence and prayer; but the same thing has been written concerning every losing and every winning army, from the battle of Hastings downward. At daybreak, however, when the hosts were mustered, and opposed face to face, a striking incident occurred. The black abbot of Inchaffray, advancing barefooted, with a cross held on high, gave his benediction to the Scottish host, who at once veiled all their banners and sank on their knees to make their peace with God, before doing their devoir before men. It is reported that Edward, seeing the strange movement of the Scottish army, imagined that they were suing his pardon; until assured by his best captains that it was to one far mightier than he they knelt, and that on that ground where they were kneeling they would conquer or die. As they rose to their feet, Gilbert de Clare flung his truncheon aloft, as a signal to the archery on the wings, especially on the English right, where they were drawn up in force; and, as usual, the cloud of the cloth-yard shafts went out, darkening the air like a snow

storm, and scourging the Scots as the plague of hail scourged the Egyptians. Under cover of this deadly and incessant storm, every arrow of which had its especial aim, and carried—according to the proverb—a Scottish life on its point, the English infantry of the centre closed, and the brown bills of the Saxons were hewing their way fatally into the “twilight wood” of the Scottish spears; while, on the English right, Randolph’s handful of horse was held in check by the powerful men-at-arms of the English chivalry. Foot by foot the Scottish centre was giving way, fighting hard, and face to the foe. Bruce had been obliged to bring up his reserves, and the Highland slogan was heard, and the Highland broadsword was seen, yelling and flashing above the shouts, and between the spears, of the Lowland infantry. At the same instant, Edward Bruce, and his picked chivalry, who had been standing dismounted by their horses, in order to avoid as well as they might the volleys of the arrow shot, sprang at the word into their saddles, and, making a circuit to the left, with all their trumpets sounding, and their long spears projecting 8 feet beyond the iron poytrels of their chargers, dashed full into the undefended flank of the archery, where there were no stakes set to meet their shock; and, driving through them almost unresisted, put them mercilessly to the sword.

For how should archer’s armor light
Brook the long lance and mace of might?
Or what might their short swords avail
Gainst barded steeds and shirts of mail?

To retrieve the defeat of their archery, and complete the advantage of their centre, the whole chivalry of the English host, in their magnificent array, with all their pomp of banners and pride of gilded armor, charged headlong into the fatal pitfalls, and, going down pell-mell, horse and man in total ruin, were overthrown, discomfited and routed, before they had met a foe. Then the tumultuary reserve of the Scotch, rushing up from the valley, in which they had remained so long ambushed, with all the appearance of a new army, in unbroken order of battle, completed the panic and disasters of the day. Edward, who would have been no Plantagenet, had he lacked personal courage, would have charged home in person, and died with his nobles and subjects, had not the earl of Pembroke wisely withdrawn him from the fight. He was closely pursued by a party of Scottish horse, and never drew bridle until he reached Dunbar, whence he escaped by sea to England; leaving to the victors his privy seal, his military chest, his camp, with all his rich baggage and artillery, and a yet larger source of wealth in the ransoms of the numerous prisoners, who could not escape, so far involved in an enemy’s country, and left without leaders, means of subsistence, or guides whom to follow. It was the greatest defeat any English army, before or since, has ever endured in a pitched battle; for

there was no retreat, or attempt to rally, but a blind rout and helpless flight, under hot pursuit, over more than 90 miles of country to the borders. In this encounter, fell Gilbert de Clare, earl of Gloucester, Robert de Clifford, Sir Edmond Maule, and Sir Giles de Argentyne, with 42 lords and barons, 67 knights and bannerets, beside prisoners of name and fame amounting, doubtless, to many hundreds; whose ransoms were of great value to the captors. How many of the lower orders fell is not to be ascertained; more were killed in the pursuit than in the action, which was as short as it was disastrous. The Scottish account that 50,000 privates were killed, in addition to 700 knights and nobles, is preposterous; and not only incredible but impossible, since it may be questioned whether there were twice that number of knights in all England. Of the Scottish, it is said, 4,000 were slain, and but 2 knights, Sir William de Vipont and Sir Walter de Bosse; but it is probable that, even here, the number of the slain is exaggerated, in order to keep some sort of comparison with the alleged carnage of the English. The battle was nevertheless as complete in its results as if it had swallowed up the king, the chivalry, and all the fighting men of England; since it established the independence of Scotland, and the crown of her king; enabled him to treat favorably with Edward; and restored to liberty the noble Scottish captives, who had, for so many years, been cruelly and ignominiously imprisoned by the English monarchs. Bruce behaved to his numerous prisoners with a kindness and moderation which does more honor to his character—especially when we regard the treatment of his own kinsmen, who were so unfortunate as to fall into the unsparing hands of the Edwards—than does the great victory, which was due mainly to his skill and conduct.

BANNS OF MATRIMONY, a public proclamation of the intention of the parties named to enter into the state of matrimony, being a notice to any one to make objection if he knows of any reason why the marriage should not take place. The term seems to be derived from the Teutonic *bann*, to interdict, whence, to put under ban, in the German empire, was to excommunicate or declare outlawry, or perhaps the interdiction may be the secondary sense derived from the proclamation of outlawry called ban. The custom is traced to the early Christians, who introduced it into their ecclesiastical polity. Its introduction into France dates from the 5th century, and in other parts of Europe it was probably adopted about the same time, or was coeval with the establishment of Christianity, as the laws regulating it are everywhere very similar. In the French and English churches they were identical, and required the proclamation to be made on 8 successive Sundays in church, during the celebration of public worship, when the whole parish were supposed to be present. The object of publication was to

prevent clandestine marriages or those which for various reasons are unlawful, as also the effect of precipitancy. Another object is stated by Ignatius, in a letter to Polycarp, to be the avoidance of marriages by Christians with Jews, heretics, or apostates, for which purpose they were instructed to confer with their bishops and priests, when contemplating marriage. In England, the banns are required to be published 3 weeks previous to the marriage, a modification of the old custom of oral proclamation, but the parties may dispense with this by procuring a license from a person authorized to grant it. Neither publication nor license is required when the parties are of the age of 21. In Scotland 3 weeks publication is necessary, and also in France, by the provisions of the Code Napoleon. In some of the states of the American union, the custom has been abolished by statute, but in Maine, New Hampshire, Connecticut, New Jersey, Ohio, North Carolina, and Tennessee, the publication is still enforced. In New York nothing of the kind is necessary, and the rule of the common law, by which the marriagable age of a boy is 14 years, and of a girl 12, is retained. A provision in the revised statutes of 1830, fixing the age of consent at 17 for a boy, and 14 for a girl, was repealed a few months thereafter, leaving the law as it was before.

BANQUETS and BANQUET HALLS. In the sacred record two feasts are mentioned, which, from their magnitude and magnificence, come within the category of banquets. The feast of Belshazzar, and that given by Ahasuerus and his queen, described in the book of Esther. Banquets were known among the Greeks as symposia, a name immortalized by Plato. Xenophon, in his "Symposium," represents Socrates as singularly pleased with the pantomimes and other feats performed on such occasions. After the dinner had been finished, libations made, and a psalm sung, they turned to drinking. Socrates, it was observed, was one of the few who could drink immoderately without intoxication, which was considered one of his most brilliant feats of philosophy. The Macedonian banquets did not pass off so pleasantly. On one occasion Philip of Macedon was assassinated during a banquet; at a later period Alexander the Great stained his banquet hall with the blood of his friend Clitus. Banqueting-rooms were common in the houses of the rich Romans during the luxurious days of the empire. Lucullus's banquet-room was called the Apollo, in which he gave magnificent entertainments to Cicero and Pompey, and his other illustrious guests. Plutarch, usually so sober, speaks with great succulence of these entertainments. The emperor Claudius had a banqueting-room of rare splendor named Mercury. But Nero's banqueting house, called Domus Aurea, eclipsed all others in the pomp of its arrangements. During the repast flowers and perfumes were showered down on the guests from the ceilings, which, by their circu-

lar motions imitated the revolution of the heavens, representing the different seasons of the year, which changed at every service. With the barbarian Scandinavians, Celts, and Britons, banquets were, according to their respective annalists, used for murderous and treacherous purposes. Over the banquet halls of the middle ages, the gallantry of the love-sick cavalier, the lovely presence of his innamorata, and the sweet sayings of the troubadours, spread a delightful halo of sentiment and romance. The reader of Walter Scott's poems and novels will remember his splendid descriptions of the banquet halls of the feudal castles.—To this day banquet halls exist all over Europe, especially in the castles of some of the British, German, and Hungarian nobles. Every royal palace in Europe has its banquet hall.—In freemason lodges, banquets play an important part. In France political banquets came into vogue since July 16, 1790, when the first of the kind was given at the park of the Château de la Muette, on which occasion deputations of the national guard, from all parts of France, attended in great numbers. When the Girondins were about to be marched off to the guillotine, they held a banquet, during which they discussed with their wonted loftiness of spirit the complicated interests of humanity. During the revolution of 1830, banquets became perfect nuisances by their inordinate multiplicity. In 1847, fiery speeches in favor of reform were made at the opposition banquet of the Château Rouge. At the cabinet banquet of Lisieux, Guizot made speeches of equal eloquence against reform. But the agitation kept on increasing, until the memorable banquet with Odilon-Barrot as toast-master sounded the tocsin of the revolution of 1848. The banquet du Chalet, in the Champs Elysées, acquired celebrity through Ledru-Rollin's brilliant discourse on that occasion.—In England and the United States, the freedom of holding public meetings and the habits of the people render such political banquets unnecessary. Still there are the diplomatic dinners of the president, the ministers, and the speaker of the house of representatives or of the house of commons, which are solemn and important affairs. The corporation of the city of London often give sumptuous banquets at the Guildhall to distinguished persons. In 1855 they gave such an entertainment to Louis Napoleon, which derived interest from the presence of the empress Eugenie. The opening of new and important railways is often celebrated by banquets; an imposing railway banquet was held at Montreal, in 1856, on occasion of the inauguration of the Grand Trunk railway.

BANQUETTE. 1. In fortification, an elevation of earth behind a parapet, on which a line of troops may stand in order to fire over the parapet upon the advancing enemy. The height of the parapet above the banquette, is usually about 4 feet 6 inches. It is about 3 feet broad when double—that is, when constructed for a double line of troops—and 1½ foot for a

single line. II. The place on the uppermost compartment in the French diligence, in front, where the conductor sits, and which is also accessible to passengers, especially smoking passengers, who love the fresh air, or who wish to ride cheaply.

BANQUO, a character immortalized by Shakespeare, in his tragedy of *Macbeth*. He was a Scottish thane and warrior of the 11th century, celebrated in British history as the progenitor of the royal house of Stuart, through his grandson Walter, first lord high steward of Scotland. He was assassinated by Macbeth in 1066, after having joined him in his conspiracy against King Donald VII.; but Shakespeare, instead of making him Macbeth's accomplice, represents him simply as his victim, while at the same time he delicately conveys through the agency of Hecate and her weird sisterhood, many well-timed compliments to Banquo and his royal progeniture, which could not fail to produce a pleasant impression upon the mind of James I., a scion of the house of Stuart, under whose reign Shakespeare's *Macbeth* was performed.

BANSHEE, or **BENSHEE**, an invisible being, supposed to announce, by mournful presence and voice, the approaching death of some member of certain ancient houses in Ireland and Scotland. It was said that, on the decease of a hero, the harps of his bards voluntarily emitted mournful sounds. This is very probable, says Walker in his "Irish Bards," for the bards, while sorrowing for their patron, usually suspended to trees their neglected harps, from whose loosened strings the passing gales might burst soft plaintive tones.—Much use has been made, in Irish poetry and fiction, of this superstition. Moore commences one of his Irish melodies (in which he laments the death of Nelson, Fox, and other eminent men, within a short space of each other) with the line, "How oft has the Benshee cried." Sir Walter Scott, in "Waverley," has made impressive use of the *Bodach Glas*, or gray spectre, whose appearance was a warning of doom to Vich Ian Vohr on the eve of battle. Banim, in his "Tales by the O'Hara Family," has a tragic story called "The Fetch," founded on this same superstition. Charlotte Brontë touches on it, at the close of "Villette," when the death-shriek heralds the doom of the absent voyager.

BANTAM, formerly a noted independent state, forming the western end of the island of Java, now a Dutch province; area, 3,081 sq. m.; pop. in 1850, 470,881. Residency or chief town, lat. 6° 1' 39" S., long. 106° 12' 41" E. The chief productions are coffee, rice, sugar, indigo, tea, cinnamon, and bay salt. All of these, except rice and salt, are exotics, and produced by forced labor. Pepper, which first attracted European adventurers, and made this country one of the most noted commercial points during the 17th century, is no longer cultivated. About 10,000 of its inhabitants are engaged in the fisheries on its coasts. The mass of the population of Bantam is of the

Sunda nation, and speak its peculiar language; but on the coast this people is mixed up with Malays, Javanese, and others who speak Malay. It was first visited by the Portuguese, under Henrique Lemé, in 1511. The Dutch, under the 2 brothers Houtman, first visited this state, and the island, in 1596; and one of the brothers was captured and held prisoner for some time by the sultan of Bantam. The English made their first appearance there in 1602, and were engaged in almost constant hostilities with their European rivals, about privileges which neither ought to possess; but the Dutch having established their capital here, and the English and Portuguese being far distant from their continental centres of operations, and operating desultorily as mere adventurers in Java, were driven out by the Dutch. The latter from time to time increased their influence in Bantam, and in 1843 the last of its rajahs was banished to Suraboya, at the further end of Java, and the country taken possession of as a province. There are 41 small islands and islets, chiefly in the straits of Sunda, which belong to the government of this province. Its divisions are Pandeglang, Tcheeringin, Lebak, and Bantam, which are administered by assistant residents. The province is administered by a resident, 2 assistant commissioners, a native regent, a *patih* or lord, a native chief-justice, 2 high priests, and a native chieftain of Pulo Panjang and other islands belonging to the province.—The capital of the former kingdom, and present province of Bantam, is of the same name. It was once a great rendezvous for European shipping, and the great mart for pepper and other spices. Its trade is now inconsiderable. The river Bantam surrounds and divides the town. The buildings erected before its decline are now in ruins.

BANTRY BAY, on the south-west coast of Ireland, county of Cork, is 21 miles long and 5 broad. Near the entrance on the north shore is a well-sheltered harbor, deep enough for the largest ships. It is called Bear haven. The entrance to it is divided by Bear island. There are 2 other anchorages at the head of the bay, opposite the town. In Bantry bay, in 1683, the French fleet, which brought James II. to Ireland, triumphed in an engagement with an English fleet under Admiral Herbert. It was also the place determined on as a rendezvous for the naval forces, with which the French designed to invade England in 1796. The scenery surrounding the bay is strikingly picturesque. About 17 miles due west from the shore of the bay, is the cataract of Hungary hill, where, in a series of cascades, are poured down the waters of 8 elevated lakes.

BANX-RING, the Sumatran name of an animal discovered by Sir Stamford Raffles, intermediate in its nature and habits between the shrew and the squirrel.

BANYA, **FELSO** (the upper mines), a town in Hungary, 4 miles E. of Nagy Banya, with a population of 4,536. It has gold, silver, copper,

lead, and iron mines, forges, founderies, and potteries, and a mining tribunal.

BANYAK PULO (Malay, many isles), a group of one considerable island, 20 miles long, and 80 islets, on the W. coast of Sumatra, area 80 sq. m.; population, 2,500. The inhabitants are a peculiar race, called Maruwi, the same as those inhabiting Simalu, and the neighboring Babi group. They speak a language bearing no resemblance to any spoken in Sumatra, or any other known. They have been seldom visited by Europeans, and but little is recorded of them; their soil is poor, and they subsist chiefly by fishing, and the export of buffaloes and cocoanuts.

BANYAN, a Hindoo merchant, broker, or banker, having dealings with foreigners. The term is by several authorities derived from the Sanscrit *bani* or *banik*, signifying a trader or dealer, and applied to the whole shopkeeping fraternity of Hindostan. Others again, tracing it to the same origin, apply the word to that particular class of Hindoo traders who, departing from the ancient custom of their people, push their commercial operations into strange countries. These give the name *banyan* to those Hindoos whom Marco Polo found among the foreign merchants at the fair of Tabriz and the port of Aden; to those traders from India who, in the middle ages, were found on the Eastern coast of Africa; to those banyans, so called, who at different periods have formed considerable and influential mercantile communities in the principal trading towns of Arabia and Persia; and to those enterprising merchants who, in later times, have carried on an extensive trade, by caravans from Bombay, Surat, and Cambay, with the interior of Asia, even venturing so far as the frontier of Russia and China. It is said that the Portuguese were driven from Muscat by the treachery of a banyan, who instigated the uprising in resentment for an affront offered to his family. Again, by a number of writers the banyans are described as a distinct caste, "believing in the metempsychosis, and abstaining from the use of flesh-meat, or of any food that has once had life;" whereas, they do not at this day constitute a separate caste, nor are they so considered in any Hindoo code, or by the Braminical priesthood. Several travellers (among whom are Tavernier and Ludolph) use the term banyan as synonymous with *Vaishya*, the name of the entire great caste of merchants and agriculturists; but for this there is no oriental authority. Tavernier and Ludolph, supposing them to be a caste of vegetarians, have gone so far as to define the word banyan as "one innocent and without malice;" and Dr. Noah Webster, in defining banyan-days, in seamen's language, as days in a week in which sailors have no flesh-meat served out to them, says: "The use of the term seems to be borrowed from the banyans in Asia, who, believing in a metempsychosis, will eat no flesh, nor even kill noxious animals." In this the lexicographer has

adopted a prevailing error of shipmasters and sailors in the East India trade, who, when the intercourse of Europeans with the natives was almost wholly restricted to a particular class of merchants and brokers, naturally ascribed to the banyans, as a caste or sect, those religious and social customs to which they hold in common with all worshippers of Brama and Vishnu, the creator and the preserver. The same explanation suffices for the various errors of travellers. In Bengal, the banyan derives his title from *baniya*, Hindostanee, a banker, and claims, accordingly, the superior status of a financier, capitalist, and speculator or broker in foreign commerce; he manages the money-matters of the European merchant, and serves him in the capacity of interpreter. In fact, the same man is styled in Madras, a *dobash*, corrupted from *dwi bashi*, "2 languages," and signifying any one who can speak 2 languages. Thus, the banyan proper will explain to you that the banyans are not a caste, but a mixed craft; and, with the Hindoo's partiality for common origins, will assure you that they are sprung from a father of the medical and a mother of the commercial class, not caste. This notion takes practical form in the fact that many of the banyans are practising physicians. Some banyans ostentatiously usurp the title of *dewan*, which implies an imposing order of delegated power; under the emperors of Hindostan, and even within very late years, at Lucknow and Delhi, the *dewan* was a confidential office, filled only by persons in high favor, who enjoyed peculiar access to the monarch. The banyans are invariably Hindoos, possessing, almost without exception, large estates, and extensive credit and influence. So generally is this the case, that it is but a few years since every description of government contracts was under the control of 20 or 80 banyans. If a government job was to be undertaken by any one not in the company's service, the banyans became his securities, on condition of receiving a percentage, and appointing their friends and dependents to such duties as might control the principal, and guard themselves against loss. If, on the other hand, a "company's servant," civil or military, was desirous of deriving benefit from some contract in the disposal of which he had a vote, and which, consequently, he could not obtain in his own name—then the banyan became the principal, and his foreign friend either received a share, or derived advantage from loans, which answered his purpose equally well. Frequently the same person was banyan to several European houses, whose affairs, thus become unreservedly known to him, were discussed with more or less vivacity at those meetings, which the banyans of Calcutta formerly held when the active business of the day was over. The English and American branch houses in the 8 presidencies, and especially at Calcutta, are established by junior partners or confidential clerks, deputed for the purpose by their principals in

London, or Boston, as the case may be. These gentlemen are assisted, in duties so novel to them, by banyans, who, like the compradors in China, supply the merchandise and control the funds—buying cargoes, and cashing acceptances. Naturally shrewd, and apt to learn, sharpened by various practice among traders from every coast, they soon become familiar with the strangest commercial usages, and expert in the tricks of trade; only the wily Greek and the astute Parsee, are competent to cope with them in regulating exchanges and managing prices, putting the market up and down as if for pastime. Nowhere are they so comfortably in their element as amid the kaleidoscopic concourse of heated speculators, drawn together by the monthly opium sale. When a banyan is retained by an English or American house, which relies upon him for cash advances, he seats his own employees at the desks, and manages the details of the office by his confidential *sircars*, or native clerks. Indeed, he to a certain degree rules the office, entering it with but slight ceremony, making rather careless salaam, and never doffing his slippers. He goes attended invariably by *sircars* and *hurkarus*—that is, clerks and messengers; he seldom condescends to visit the bazaars, but sends a broker; and he transacts his business generally by means of messengers, and *chits*, or notes. In fact, the banyan is aware of his importance, and makes the most of it. England has acknowledged her indebtedness to this class for her extended trade in the fabrics of Dacca, in the sugar of the western and northern districts, in indigo throughout the country, and in several other branches of commerce which, but for him, must have dwindled. The banyan often reaps large profits from the futile speculations of his employer. In Calcutta the principal banyans to American houses are the Baboos Kalidas and Rajinda Dutt. Ashootas Dey, who died in 1855, had transacted an extensive business directly with Boston houses for many years; his ready capital was said to amount to 30 lacs of rupees (\$1,500,000). His business has fallen to his nephew. Ashootas Dey was the only native merchant who received important orders direct from the United States; the same may be said of Ram Gopol Ghose on English account—wise and honorable men, and not to be included in the same category with those unscrupulous money-lenders of the presidencies, to whose arts the foolish young civilian so easily succumbs.

BANYULIS DES ASPRES, a commune in the department Pyrénées-Orientales, France, with 472 inhabitants. It is celebrated for the brave defence of 1793, when its inhabitants, attacked by 7,000 Spaniards, compelled them to surrender.

BANYULIS-SUR-MER, a commune, pop. 1,357, in the department of Pyrénées-Orientales, France, with a fishing port on the Mediterranean. Four ancient towers, one of which indicates the dividing line between the territories

of France and Spain, stand near the town. The wines of Grenache and Rancio are produced in the district.

BANYUMAS (Javanese, golden water), a central province or residency of the island of Java, bounded N. by Tegal and Pakalongan, E. by Bagelen, S. by the Indian ocean, W. by the Prayanagan regency, area 1,906 sq. m.; population in 1845, according to Van Carnbee, 405,654, of which 286 are Europeans, 2,225 Chinese, 24 Arabs and other Asiatics; chief town, or residency, in lat. 7° 38' 45" S., long. 109° 19' 20". The chief culture is rice, but coffee, tea, sugar, indigo, cinnamon, and other exotics, are produced by *corvée* labor, as enforced by the Dutch in other parts of Java. Nusa Kambangan or Floating Island, the largest on the southern coast of Java, forms part of this province. The divisions of the mainland of the province are Poorwakara, Poorbolingo, Bandjar, Negara, and Tchilatchap, which are administered by assistant residents. The province is administered by a resident, assisted by a raden or native prince; a commissioner of cultures, a native chief-justiciary, *hoofd jaksa*; a high-priest, *hoofd panghulu*; and captain of the Chinese. Mount Tegal, which forms part of its north boundary, is 11,250 feet high.

BANYUWANGIE (Javanese, fragrant water), a district forming the eastern end of the island of Java. Residency, or Dutch seat of government of district, lat. 8° 19' 40" S., long. 114° 26' E. Population in 1849, according to official Naam register, 29,775; of which 86 are Europeans, 196 Chinese, 1,858 Arabs, Bughis, and other natives of the archipelago, and 27,640 natives. It is much less populous and less prosperous than any other portion of Java; and this is not owing to any inferiority of soil, or other local disadvantage, but chiefly on account of the frequent ravages of the country by the bold and energetic inhabitants of the neighboring little island of Bali, from which it is separated by a strait, only one mile and a half broad. In the animal and vegetable kingdom and general productions, there is nothing to distinguish it from the rest of the island. The Dutch administration is confided to an assistant-resident who is also commissioner of the affairs of Bali and Lombok; an assistant commissioner, a native regent, or *Tumungging*; a chief native justiciary, *hoofd jaksa*; a high-priest, *hoofd panghulu*; a captain of the Bughis and Madurese, and captain of the Chinese.

BANZ is the name of perhaps the finest and richest abbey of the Benedictines known in history, situated in upper Franconia (Bavaria) in the midst of a charming landscape. The monks of this abbey were celebrated for their scientific attainments, their humane spirit, their writings, their collections in natural history, and their library. Founded in the 11th century, during the peasants' war and the 30 years' war, it was twice destroyed, and each time restored with fresh magnificence. The church and buildings are so splendid and the territory belonging to the abbey so fertile, that after the convales-

was abolished in 1802, it became the summer residence of several Bavarian princes. The last abbot, Gallus Dennerlein, an enthusiastic student of natural history, was transferred to the museum of Bamberg, where he exhibited the valuable collections made by him until within a recent period.

BANZARDAH, a strongly fortified mountain fastness in the Persian province Irak-Ajeme. To this pass, the last of the Sassanides fled after the battles of Cadesia and Nehavend in 641, which put an end to that dynasty, and made Persia the conquest of Arabia.

BAOBAB, a tropical tree of enormous size found in Africa, and especially in Senegal, though the expedition of Mohammed Ali discovered it on the banks of the White Nile, and Livingstone found it flourishing in the vicinity of the southern tropic. The baobab was first discovered in 1748, by the renowned traveller, Adanson, in his voyage to Senegal, and it has been raised in England from seeds. The botanical name given to this tree is *Adansonia digitata*, the first appellation in honor of its discoverer, and the second descriptive of its five-parted leaf. It belongs in the natural order *bombaceæ*. Its appearance is peculiar. It has an immense trunk, measuring from 15 to 60 feet in height, and from 70 to 75 feet in circumference, and from its enormous size giving one the idea of a mass of granite. Its lower branches grow horizontally to the length of 60 feet frequently, and hang to the very ground, thus concealing the trunk, and looking like a mound of verdure, or a green hillock. The leaves are large and abundant, and of a dark green color, and are divided into five radiating lanceolate leaflets, and used by the natives as an anti-sudorific; the flower is large, white, with stamens gathered in a tube below, but spreading like an umbrella above, surmounted by a long, slender, and recurved style, terminated by a rayed stigma, petals reflexed and calyx deciduous; its fruit is a soft pulpy but dry substance, about the size of a quart bottle, enclosed in a long dull green woody pod; the pulp between the seeds tastes like cream of tartar, and is used by the natives to give a flavor to their porridge, and is much esteemed as an antifebrile. The baobab is also called monkey bread, sour gourd, and lalo plant. The natives make a strong cord from the fibres contained in its pounded bark. To this end they often wholly strip the trunk of its bark, which in the case of almost any other tree would cause its death, but such is the wonderful vitality of the baobab that it has no other effect upon it than to make it throw out a new bark. No external injury, not even fire, can destroy it from without, nor can it be injured from within, as it is quite common to find it hollow. Even cutting down does not exterminate it, for it continues to grow in length while lying on the ground, and its roots, which reach 40 or 50 yards from the trunk, retain their vitality. Livingstone judged that one of the baobab trees which

he examined, was at least 1,400 years old. It is subject to a very remarkable disease, a softening of its woody structure, until it falls by its own weight a mass of ruins. The natives use the trunk hollowed out as a place of deposit for executed criminals whom the law denies the rights of burial. In this position the bodies soon wither and dry up, having much the appearance of mummies.

BAOUR-LORMIAN, **PIERRE MARIE FRANÇOIS LOUIS**, a French poet, born in Toulouse, March 24, 1770, died in Paris, in 1856. He gained the favor of Napoleon I. by an imitation of Macpherson's fragments, wrote some unsuccessful tragedies, and miscellaneous poems, became, in 1815, a member of the French academy, and undertook a translation of Tasso's "Jerusalem Delivered," which has been forgotten.

BAPHOMET, or **BAFFOMET**, a symbol of the knight-templars, said by their enemies to have been a bust of the devil, who was worshipped by them with mysterious rites. Others esteemed it a bust of Mohammed, and thought that the order had apostatized from Christianity and adopted Islamism. Still others believed it to be the Gnostic divinity, *Mets* or Wisdom. Some of these curious symbols were found in 1818 in the imperial museum of Vienna. They are of stone, and represent a female figure with 2 heads or faces, and on which are inscribed a serpent, a truncated cross, or Egyptian key of life and death, the sun and moon, a chess-board, a candlestick with 7 branches, and numerous Arabic inscriptions.—The word baphomet is also used to denote a baptism by fire, or Gnostic baptism.

BAPTISM (Gr. *βαπτισμα*, from *βαπτίζω*, to baptize, from *βαπτο*, to wash, or dip), the application of water to a person as a sacrament or religious ceremony, usually performed by immersion or sprinkling. Although lustrations were prevalent as religious rites among the Indians, Egyptians, Greeks, and Romans, and particularly among the Essenian sect of the Jews, yet the existence of baptism as a ceremonial for the admission of proselytes, or as giving validity to such admission, has not been historically traced earlier than the Christian era. What had been among the Jews, probably, only a purifying ceremony, was made by John and Christ a rite of initiation into the Christian church. Though baptism, as the symbol of an inward change, was conferred at first only upon converts to the Christian faith, according to the prevailing modern opinion of Biblical critics, yet at an early period the practice was introduced of baptizing infants, the church requiring security, through certain sponsors, that the children should be brought up to lead a godly and Christian life. The form of baptism at first was, according to most historians, by immersion; but as Christianity advanced into colder climates, the more convenient mode of sprinkling was introduced. The significance of baptism in the Protestant church, excepting, perhaps, a branch of the Anglican church, is as a symbol of the new birth, an outward sign

of spiritual grace. One of the parties of the Anglican church entertains views of baptismal regeneration similar in many respects to those held by the Roman Catholic church.—According to the Roman Catholic writers baptism is a sacrament which has the effect to remove in the individual the penal consequences of the sin of Adam, to restore him to a state of supernatural grace, and to give him a right to the beatific vision of God, remitting all actual sins committed by the individual. It also imprints an indelible character, which is both an ornament to the soul and a capacity for receiving the other sacraments. The effect of the sacrament is produced *ex opere operato*; i. e. by an act of the Holy Ghost infallibly accompanying the performance of the external rite. Bishops, priests, and deacons are the ordinary ministers of baptism, and all others are forbidden to baptize, except in case of necessity. Baptism is, however, valid when duly administered by any person, and any one may lawfully baptize in case of necessity. On the part of children and others, who have never attained the use of reason, no dispositions are required. In order to receive the sacrament validly, a person who has the use of reason must know what he is doing, and intend to receive baptism. In order to receive the grace of the sacrament he must have faith, and, if he has committed mortal sins, repentance; otherwise the grace of the sacrament remains suspended until he acquires the proper dispositions.—Beside sacramental baptism, called *baptismus fluminis*, there are two substitutes which can supply its place, called, in a wide and improper sense, *baptismus sanguinis* and *baptismus flaminis*. The former of these is martyrdom, the second is the desire of baptism, accompanied by faith and perfect contrition or the love of God. These only supply the place of baptism when it cannot be had, and confer sanctifying grace, but not an indelible character. Solemn baptism is accompanied with the application of chrism and holy oil, and several other ceremonies of great antiquity, which are intended to symbolize the graces of baptism. By every mortal sin the sanctifying grace of baptism and the title to eternal beatitude are lost, but not the indelible character or the capacity and right to receive the graces belonging to the state of a member of the church and a child of God, on condition of removing the obstacle of sin by penance.

BAPTISTE, JEAN BAPTISTE MONOYER, a French painter of fruit and flowers, was born at Lisle, in 1685, and died in 1699. He was employed upon the decorations of the palaces of Versailles and Marly, and afterward practised his art in England, for many years, with great success, in ornamenting halls, staircases, and the interior of houses.

BAPTISTERY. In the early history of the church the rite of baptism was performed like that upon the eunuch by Philip, wherever there was water convenient. But when, after the time of Constantine, the Christians began

to erect churches and cathedrals, naturally attention was given to securing a convenient place for baptism near the church. In addition to this, only the bishop of a diocese had the right to baptize. Baptism, moreover, was administered but twice or thrice in a year; at Easter and at Pentecost, at first, and afterward at Christmas. This made the number of baptisms for a diocese large, and the labor of the bishop on those days protracted and arduous. The result was that buildings were erected near the "church of baptism," provided with the conveniences for performing the rite. These were called baptisteries. They were generally circular, and in some instances very expensive in structure and ornament. The ornaments were usually symbolic, such as a dove over the font, a statue of John the Baptist, and a hart, illustrative of a passage in the Psalms. Two of the most famous, those of Rome and Florence, were octagonal, that at Pisa circular. The architecture approaching the circular base was thus fundamentally different from that of churches which recognized the square as their type. In later times, when priests were allowed to baptize, in the 6th century, baptisteries outside of churches gave place to fonts within. The canopy which covers the font in some English and American churches is so large as to admit persons under its roof. It is then sometimes designated a baptistery. Sometimes temporary baptisteries were erected when some person of note was to be baptized, after the custom of permanent baptisteries was discontinued. Thus, Edwin, king of Northumberland, was baptized in such a temporary structure (A. D. 627). The reservoirs for baptism in modern Baptist churches, sometimes within, and sometimes without the church, are frequently called baptisteries. Technically, this is not incorrect, as the baptistery means only a large vase or receptacle for baptismal purposes.

BAPTISTS, a denomination of evangelical Christians, which differs from others in certain principles connected with baptism as the initiatory ordinance of Christianity. This difference is commonly understood as limited to the proper age and mode of its administration, and hence Baptists have been defined as "those who believe in adult baptism by immersion." But this definition is inaccurate and incomplete. Inaccurate, for in the view of the Baptists age is nothing, but spiritual qualification is every thing; hence they baptize all who repent and believe the gospel, whether in childhood, youth, or manhood, and, very frequently, whole households at once, as did the apostles. The definition is incomplete, for many who are not Baptists, believe that the immersion of adults was the primitive baptism of the New Testament. The fact is generally admitted in works of scientific authority, both historical and archaeological. Baptists, then, properly defined, are those who hold that the baptism of Christian believers is of universal obligation and practise accordingly. And they hold it

because they acknowledge no master but Christ; no rule of faith but his word; no baptism but that which is preceded and hallowed by personal piety; no church but that which is the body of Christ, pervaded, governed, and animated by his spirit. Whatever diversities of opinion and usage are found among them, these are their common and characteristic principles; by these they are known and distinguished in every country, and in every age. On like grounds, also, the Baptists reject (though with far less concern) the substitution of sprinkling for the entire immersion of the body, which, they maintain, was originally practised in the administration of baptism, and (except in the case of the sick) universally observed throughout Christendom for 1,800 years. For the universal obligation of immersion as identical with baptism itself, and essential to its specific spiritual purposes, they urge the admitted signification of the word βαπτίζω, the necessity of adhering to the ordinary meaning of words in the interpretation of laws, the places where the rite was originally performed, the phraseology employed in describing it, the undeniable example of Christ himself, and the metaphorical allusions of the sacred writers when explaining the spiritual import of the rite; all which, they say, confirm the meaning to be immersion, and necessarily exclude every other. They maintain that no valid objections have ever been brought against the combined force of this evidence, and that, so far as the meaning of the word is concerned, they have the concurrence of the whole body of the Reformers of the 16th century, who were withheld from restoring immersion among Protestants generally, not by critical reasons, but by their views of church authority and expediency. The Mennonites, or Dutch Baptists, restored immersion; but a part of them, though still rejecting infant baptism, have since adopted pouring, by confounding the outpouring of the Spirit with the baptism of the Spirit—the cause with the effect; hence, those who retain immersion are now called Tunkers, *i. e.* dippers. It is, however, well known that all the Greek and oriental churches (with a population of 100,000,000), though adopting the baptism of children, retain immersion to this day, as essential to the validity of the rite, and, as Bunsen remarks, “deny that there is any efficacy in the western form of baptism.” The Baptists (with the small exception mentioned above) regard it as one part of their mission to uphold, and, as far as possible, to restore throughout Christendom, the original institution of Christ in its entire form and spirit.—On the subject of church communion the Baptists generally agree with other denominations that it is not proper before baptism. As they find no exception to this rule in the New Testament, they do not feel authorized to invite those who are not, in their view, duly baptized, to unite with them at the Lord's table, however highly they esteem them. They profess in this limitation of church communion that

they do not judge the consciences of others, but seek to preserve their own. Open communion, so eloquently advocated by Robert Hall in England, the Baptists of the United States regard as an anomaly. Yet, while holding these views, they claim to feel a cordial sympathy with other evangelical denominations, and rejoice to coöperate with them, as far as possible, in the work of Christ.—As it regards church government, the Baptists believe in the spiritual unity of the whole believing church under Christ, its head, and in the duty of making this unity visible by subjection to him in all things (John xvii. 21). Local churches, like those of Jerusalem and Antioch, composed of converted members, duly baptized, embodied under the law of Christ by free mutual agreement, and maintaining the truth in love, they hold to be, according to the New Testament, the appointed means, in the first place, for manifesting this unity. The government of these churches is congregational. Each body being immediately dependent on Christ, is, therefore, independent of all others, and is complete in itself for the management of its internal affairs, such as the choice of officers, declaration of faith, reception, dismissal, or discipline of members. Each church is a tribunal, where Christ himself presides, ratifying in heaven whatever is done according to his will on earth (Matt. xviii. 17–20). Baptists recognize no higher ecclesiastical tribunal on earth as constituted by Christ. This principle of independence is, however, quite distinct, in their view, from selfish isolation. It is balanced by another principle equally dear to them—that of intercommunion, or the communion of churches. This intercommunion is the highest form of visible unity, and is never to be interrupted without necessity. On this principle their churches associate, invite councils for advice, and organize societies for mutual coöperation in any benevolent, educational, or missionary enterprise. But all such associations among Baptists disclaim the slightest jurisdiction over the churches, and any attempt to usurp ecclesiastical power would be indignantly repelled.—Baptists make no distinction but that of office between clergymen and laymen. As each church is a little spiritual republic, so every member is entitled to a vote, and is trained to all the duties of an active citizen. The voice of the majority governs, but they seek, by fraternal discussion and prayer, mingled with love and forbearance, to secure perfect unanimity, according to the will of God. They recognize no higher church officers than pastors and deacons. Elders, as evangelists and missionaries, are also ordained, after due trial, and sent out to preach the gospel. Councils are usually called by the churches, to advise and assist in the ordination of ministers, the formation of churches, and the settlement of serious difficulties. Such councils are sometimes called presbyteries, but they must not be confounded with the bodies that bear that name in the Presbyterian church, as they have neither judicial nor appellate powers. Whatever be

their differences in other things, Baptists all agree in maintaining the congregational form of church government. With Congregationalists, so called, they differ only in regard to baptism and in being more strictly congregational.—In Great Britain the Baptists, next to the Congregationalists, form the most numerous body of Protestant dissenters. In London they have 140 churches. In England the body is divided by their views of the design of Christ's redemption into General and Particular Baptists, the former taking Arminian, and the latter Calvinistic, ground. The New Connection of General Baptists seceded from the Old, to exclude Unitarianism, which was creeping in. They are strict communionists. They have a theological school at Leicester, a successful mission at Orissa, in India, and, though a small, are a zealous and flourishing body.—The Particular Baptists, however, are altogether the most numerous and influential. They have 2,000 churches, near 200,000 members, and a population of about 1,000,000 souls. They have 6 theological colleges—at London, Bristol, Horton, Haverford West, Pontypool, and Edinburgh. Their 1,600 ministers are mostly well educated. Dr. Chalmers pronounced them, "for their number, the most intellectual body in England." Their periodical organs are the "Freeman," a large weekly sheet, and 8 monthlies, the "Baptist Magazine," "Baptist Reporter," and the "Eclectic Review." This body holds different views on the question of communion; the prevalent views are those of Robert Hall. In all other respects they are united. Within half a century they have advanced rapidly in numbers and influence. They support the important mission to India, begun by Carey in 1793, and which has done so much by its preaching, and still more by its literary labors, for the evangelization of the East. They also support a Baptist home mission, and missions in Ireland, France, Africa, Honduras, and the West Indies. The Jamaica mission is now self-supporting, but the home society has established and sustains at Calabar, in Jamaica, a theological institution for native candidates for the ministry, which is in a flourishing condition, and promises much for Africa also. Baptist principles are spreading rapidly in all the widely extended colonies of Great Britain, particularly Australia, New Zealand, St. Helena, New Brunswick, Nova Scotia, and the Canadas. They are taking deep root in the army and navy, in the house of commons, and the peerage. On the continent of Europe, within 25 years, near 10,000 converts have been baptized, and 70 churches planted in the principal cities of France, Germany, and Denmark, beside 30 churches in Sweden, with 1,500 members, baptized within the last 2 years. Many of these converts have suffered severe fines and imprisonments; some have been denied the liberty of marriage; others have had their children torn from their arms to be baptized in the state church; others, still, have been condemn-

ed to perpetual banishment. But in the face of all this intolerance they have advanced. They have manifested the spirit of the primitive martyrs. Hundreds, driven from their homes, emigrate to America, and here spread their principles among their countrymen in the western states. The number now here is about 2,500, with 88 churches and 85 ministers. Recent information from France and Switzerland announces the gradual abandonment of infant baptism by the free evangelical churches, and also by some in the Protestant national church.—In the United States the Baptist, with one exception, is now the largest denomination of evangelical Christians. They are spread through every state and territory. They form one body, differing in nothing but in their position in regard to slavery. Owing to this difference, in 1845 the southern Baptists, by mutual consent, formed separate organizations for their benevolent enterprises, and, by avoiding bickerings, both sections have reaped the advantages of a division of labor. By the "Baptist Almanac" for 1858 it appears that in 1856 they had 11,039 churches, 6,648 ministers, 942 licentiates, and 897,718 church members, of whom 61,971 were added by baptism during the year. Including those of the British provinces and the West Indies, the total membership was 963,580. Beside these there are 9 minor sects which agree with the Baptists in practising the immersion of believers only, but differ more or less in other points. If these be added, with the usual increase for the last 2 years, the total rises to more than 1,500,000. The total population attached to Baptist views is estimated at from 6,000,000 to 7,000,000. By the United States census of 1850 it appears that they then had 8,791 church edifices, valued at \$10,931,382, and containing nearly one-fourth of the church accommodations in the United States. Since then these have been greatly multiplied and improved.—The ministry of the Baptists, says Dr. Baird, "comprehends a body of men, who, in point of talents, learning, and eloquence, as well as devoted piety, have no superiors in the country." The Baptists have never made classical scholarship a prerequisite to the ministry of the Gospel, lest they should seem to be wiser than God; but it is a mistake to suppose they have ever despised education or knowledge, except when substituted for holier gifts. As early as 1764, when numbering, in all America only 60 churches and about 5,000 members they founded their first college in Rhode Island. Long before, they had fostered Harvard, and helped Franklin to lay the foundations of the university of Pennsylvania. They now have 83 colleges and universities of their own, over 100 academies and female seminaries of a high grade, and 11 theological schools. They have publication societies at Philadelphia, Charleston, and Nashville, beside many flourishing private publishing houses in our large cities. They maintain 42 periodical organs, 2 of which are quarterly reviews. If we add those of the

British provinces, the total is 18 theological schools, 35 colleges, and 48 periodical organs of the Baptist denomination in North America. The Baptists of the United States also support the American and foreign Bible society, the American Baptist missionary union, the free mission society, the southern Baptist board of foreign and domestic missions, the Baptist home mission society, and, in part, the Bible union. Their missions are planted in Canada, Oregon, California, New Mexico, Hayti; in France, Germany, Denmark, Sweden, Norway; in western and central Africa; in southern India, Assam, Burmah, Siam, and China. The number of conversions from their colportages and missions last year exceeded 4,000. Total number in the mission churches, over 25,000. The income of all the above societies in 1857 was \$800,000.—In doctrine the Baptists of this country are Calvinistic, but with much freedom and moderation. The New Hampshire declaration of faith in 1838 is the most popular. They relish highly the works of John Bunyan and Andrew Fuller, though some prefer the peculiar views of Dr. Gill. Their ministers preach the gospel freely, with a warm application to the conscience and the heart. No denomination is more characterized by experimental piety. The evidence of its possession is always required of candidates for baptism.—Beside the general body of Baptists there are, in the United States, 9 smaller bodies, distinguished by peculiarities indicated by their respective names. The Seventh-Day Baptists differ only in the observance of the Jewish Sabbath; the Free-will and the Anti-mission Baptists are seceders from the general fellowship on account of Arminian and Antinomian tendencies, though the former are zealous Christians and the latter are gradually adopting different views and returning to the general body. The General (or six principle) Baptists, the Tunkers, and Mennonites, are of foreign origin, and cling to their ancient usages. The Christian connection, the Campbellites (or Disciples), and the Winebrennarians (or church of God), are new organizations, drawn from various sources, though agreeing with the Baptists generally as to the subjects and mode of baptism. For the peculiarities of each see the respective articles.—The Baptists, as will be evident from the above exposition of their principles, claim their origin from the ministry of Christ and his apostles. They further claim that all the Christian churches of the first two centuries after Christ were founded and built up on the principles they profess; in proof of which they appeal to the high critical authorities in church history, Mosheim, Neander, Hagenbach, Jacobi, and Bunsen. They further claim to be able to trace their history in a succession of pure churches (*cathari*) essentially Baptist, though under various names, from the 8d century down to the reformation. These churches, from the 5th century onward, were the subjects of systematic persecution from the state churches,

both in the East and in the West. Cyril of Alexandria and Innocent I. of Rome, according to the historian Socrates, began this persecution by depriving them of their houses of worship, and driving them into secret places, under the laws of Honorius and Theodosius II., which forbid re-baptism (so called) under penalty of death. Yet their principles reappear among the Culdees of the West and the Paulians of the East; the Vallesii and the Paterines, the Albigenses and Waldenses, and emerge on all sides at the first dawn of the reformation. In the opinion of Sir Isaac Newton, as reported by Whiston, "the Baptists are the only body of Christians that has not symbolized with the church of Rome."—Of the German Baptists of that era (with few exceptions) much might be said to vindicate them from the charges brought against them by their enemies, and to give deserved honor to their eminent men, their pious confessors, and numerous martyrs. Two folio volumes of materials for their history were collected by T. J. von Bracht in 1660. But Mr. Bancroft has summed up the matter in a few pregnant words: "With greater consistency than Luther they applied the doctrines of the reformation to the social positions of life, and threatened an end to priestcraft and kingcraft, spiritual domination, titles, and vassalage. They were trodden under foot with foul reproaches and most arrogant scorn, and their history is written in the blood of thousands of the German peasantry; but their principles, secure in their immortality, escaped with Roger Williams to Providence, and his colony is witness that naturally the paths of the Baptists are paths of freedom, pleasantness, and peace." See ANABAPTIST.—In England, from the time of Henry VIII. to William III., a full century and a half, the Baptists struggled to gain their footing, and to secure, not only toleration for themselves, but for all, on the broad basis of liberty of conscience. From 1611 (as appears from the documents recently republished by the Hanserd Knollys society) they issued appeal after appeal, addressed to the king, the parliament, and the people, in behalf of this "soul liberty," written with a breadth of view and force of argument hardly since exceeded. Mr. Locke has truly said: "The Baptists were from the beginning the friends of liberty; just and true liberty; equal and impartial liberty." Yet, until the Quakers arose, in 1660, the Baptists stood alone in its defence, amid universal opposition. In the time of Cromwell they first gained a fair hearing, and, under the lead of Milton and Vane, would have changed the whole system of the church and the state, but for the treason of Monk. In the time of Charles II. the prisons were filled with their confessors and martyrs, yet their principles gradually gained ground in the public mind and hastened the revolution of 1688. "The share which the Baptists took," says Dr. Williams, "in shoring up the fallen liberties of England, and in infusing new vigor and liberality into the constitu-

tion of that country, is not generally known. Yet to this body English liberty owes a debt it can never acknowledge. Among the Baptists Christian freedom found its earliest, its staunchest, its most consistent, and its most disinterested champions." Nor less powerful has been the influence of the Baptists in the United States. Introduced into Rhode Island with Roger Williams and John Clark in 1638, their history for more than a century, in most of the colonies, is that of proscribed and banished men. Yet, persecuted themselves, it is their glory never to have persecuted others. "In the code of laws established by them in Rhode Island," says Judge Story, "we read, for the first time since Christianity ascended the throne of the Cæsars, the declaration that conscience should be free, and men should not be punished for worshipping God in the way they were persuaded he requires." From that declaration Rhode Island has never departed, and in it she was followed, first by Pennsylvania and New Jersey, afterward by Virginia, and since by all the United States. The article on religious liberty in the amendments to the American constitution was introduced into it by the united efforts of the Baptists, in 1789. (See Howell's Address before the Am. Baptist Historical Society, 1856.)—The new impulse given to the spirit of liberty by the revolutionary war was followed by the rapid spread of Baptist principles. Their great prosperity dates from that era. In 1762 there were but 56 Baptist Churches in America; in 1792, there were 1,000; in 1812 there were 2,433; in 1832, there were 5,322; in 1852 they exceeded 9,500; at the present time (1858), without including any of the minor Baptist bodies, they amount to 12,000, with 1,000,000 members, and, if we include them, 1,500,000, and an attached population, according to the usual estimate, of 7,500,000. From these statistics it appears that the increase of the Baptists far outruns that of the population of the United States. And the rates of increase have been greatest in Massachusetts and Virginia, where they were most persecuted, and in the new states, where their zealous ministers were among the earliest pioneers. (See Curtis's "Progress of Baptist Principles for the last One Hundred Years," Boston, 1856.)

BAR. I. A town of British India, in the Bengal presidency, in the district of Bahar on the Ganges; pop. 28,000. II. A river of France, department of Ardennes, which rises near Buzancy, and falls into the Meuse below Donchery. It is in connection with the Ardennes canal. III. A town in Russia; government of Podolia, circle of Mohelev; pop. 7,800. It was so called after the birth-place of its foundress, Bona Sforza, the wife of King Sigismund I. of Poland. It is famous as the place where a confederation of the Polish people was held with a view to combating the Russian influence and the adherents of Russia in Poland, Feb. 29, 1768. The Russians took Bar by storm, on the following May 28, together with 1,400 men and 20 pieces of cannon.

BAR. I. In law, originally designated a railing by which a space was enclosed for the use of counsel in courts, hence the term barrister. In England a distinction is made between counsel, some being admitted within the bar as kings' or queens' counsel, sergeants, and others of special distinction, while the residue of the profession are without the bar, there being, however, still another railing separating them from the common people. In this country no such distinction exists between counsel. The term is used here and in England to express the legal profession. II. In music, a line drawn vertically across the staff, for the purpose of dividing the music into equal measures of time. The term is very often improperly applied to measures themselves. The quantity of time included between 2 bars varies as the time is triple or common, the former being equivalent to 3 crotchets and the latter to 4. The thick bar at the end of a piece of music is called the double bar. Bars were first used about the middle of the 17th century. III. In hydrography, a bank of sand or other matter which forms itself at the mouth of a river or a harbor, whereby the entrance of large vessels becomes dangerous or impossible.

BAR-LE-DUC, or BAR-SUR-ORNAIN, the chief town of the department of Meuse, France, on the Ornaïn, and the canal now constructing between the Marne and the Rhine, 128 miles E. of Paris. It was anciently fortified with a strong castle, the ruins of which are yet to be seen, and had some historical importance, being the capital of the duchy of Bar and the birth-place of Francis, duke of Guise, surnamed *le Balafre*, of Marshal Oudinot, and Gen. Exelmans. It contains some old public buildings: in one of the churches is the celebrated monument of René de Châlons, prince of Orange, by Richier, pupil of Michel Angelo. Bar is now a manufacturing and trading town, having establishments for spinning cotton, fabrics of cotton stuffs, handkerchiefs, hosiery, hats, and jewelry, with tanneries, &c. Its preserved fruits, and above all, its *confitures de groseille*, are highly esteemed, as well as its sparkling wine. The Ornaïn being navigable from the town, it has a considerable trade in forwarding timber, wine, and other articles for the supply of Paris; pop. 12,230.

BAR-SUR-AUBE, a town of France, department of Aube, 116 miles S. E. of Paris. It is very ancient, and was, in 1814, the scene of a bloody battle, after which it was nearly destroyed. It has now a trade of some importance in breadstuffs, wine, wood, hemp, and wool; pop. 4,169.

BAR-SUR-SEINE, a town of France, department of Aube, on the Seine, 106 miles S. E. of Paris. It was a large place in the middle ages but it was several times ruined during the Burgundian wars. In 1814, when European armies invaded France, a bloody battle was fought under its walls. It now trades in breadstuffs, wines, brandies, wool, and hemp; pop. 2,494.

BARABA, an immense steppe of Siberia, 200

miles in breadth from E. to W., and 400 from N. to S., lying in the southern part of the province of Tobolsk, and including a part of Tomsk. The Altai mountains enclose it on the south, and the Irtysh and Obi rivers on the N., W., and E. It abounds in swamps and salt lakes, the waters of which become poisonous during the summer. The inhabitants are of Tartar origin, and chiefly shepherds or fishermen. The steppe contains 7 market towns and 24 villages.

BARABALLI, an Italian poet, born at Gaeta, who lived during the latter half of the 15th century. Although a mere rhymester, his vanity was so great that he imagined himself the rival, if not the superior, of Petrarch, and was constantly repeating his senseless verses, written in the vilest Italian. To cure him of this infatuation Pope Leo X. invited him to recite his poems in public. After which the ceremony of a mock coronation took place, and the poet was led in triumphal procession on the back of an elephant, which finally threw him to the ground, amid the jeers of the bystanders. The unfortunate man seems never to have recovered from this discomfiture.

BARABRA, or **BEEABERA**, the name by which, in Egypt, the inhabitants of a small geographical district in upper Nubia are designated. They are to be distinguished from the Berbers. Their name, although similar, does not appear to have had the same derivation. The Berbers received their name from the Arabians, while the Barabra appear to have had theirs from the Egyptians. If, however, the word Berber is the plural of Ber or Bar, a desert, then perhaps the Barabra may have received their title for the same general reason as the Berbers, because the inhabitants of a desert. Their geographical location is in a desert tract lying on the right bank of the Nile, about 3 or 4 miles back from the river, and south of the confluence of the Atbara with the Nile. This tract is a desert, relatively considered to the fertile strip that lies between the wretched huts and the river. Very appropriately, then, may they be called inhabitants of the desert, which they appear to have settled upon from sheer preference of aridity and barrenness. Their territory consists of 4 small villages, the one-story houses of which are built of sun-baked mud, in the form of a hollow square, and divided into such apartments and endowed with such simple furniture as meet the wants of such a stage of civilization as theirs. One window usually lights the hovels called rooms, and the only article of furniture which adorns them is a bedstead or sofa, made of reeds and ox-hide, or a floor mat for sleeping, of the same materials. They use freely an intoxicating drink called *douza*. The women make it from highly leavened *shoura*, a kind of bread. They trade with Egypt in cattle, which they pasture in the mountains beyond the Atbara, near the Red sea. They, therefore, frequently visit Egypt, though their own villages, lying so near the Nile, are the principal marts of trade for the whole Sennaar country. Their

morals are spoken of quite depreciatingly by travellers. They are physically strong and handsome. They are dependent on Egypt.

BARACOA, a seaport of the island of Cuba, with an extensive export trade. In the vicinity is a remarkable table mountain called the Anvil of Baracoa; pop. 2,000.

BARADA, the country from Jerusalem to Antioch, is one extensive water-shed, stretching from N. to S. nearly parallel to the western shore of the Mediterranean, and at an average distance from it of about 60 miles, through an extent of five times that distance. This is the great chain of Lebanon, or more specifically the two parallel ranges of Libanus and Anti-Libanus. About midway of this mountain chain the two ranges approach each other and unite in the highest peak of the entire stretch, Mt. Hermon. From this, the culmination of the great southern spur of the Taurus, 4 great rivers take their rise, which flow to what have been almost from the beginnings of human history 4 great and important kingdoms—the Jordan, which flows south to the Dead sea, and is the river of Palestine—the Orontes, which rushes northward to Antioch, and is the river of the Grecian kingdoms of Antioch and Seleucia—the Litany, or Leontes, which cuts its way through the rocky barriers of the Lebanon range to the Mediterranean, bisecting the kingdom of Phœnicia—and the Barada, which tumbles from the high table-lands of the Anti-Libanus upon the plains of Mezzeh, and pursuing a south-easterly course empties first into the sea of Damascus, by that ancient city, and finally into the Bahr el Meri, some 12 miles to the east of Damascus, and is the river of Syria. This is the Abana of ancient times, in which Naaman the Syrian preferred to wash for his leprosy, when the prophet directed him to wash in the Jordan, as is evident from the location, and also from the fact that that part of the Anti-Libanus from which the Barada takes its rise is still called Abana, or Amana. The Pharpar was probably the river now known as the Wady el Awadj, and which has its source in the more immediate highlands of Mt. Hermon, passes to the south of Damascus, and makes its fork with the Barada only about 1 mile from its mouth. The Barada is minutely described both by Stanley, of England, and Robinson, of this country, from personal observations. It rises on a high tableland of the Anti-Libanus, is a deep, broad, rushing mountain stream, with limpid water, and skirted with beautiful scenery. It is the source of fertility to Damascus, in the numerous canals which have been taken from it for purposes of irrigation. Strabo describes it in his day as exhausted by these artificial drafts upon its current. It is the Bardines or Orysorrhœas of the ancient Greeks. The Barada winds through the sterile peaks of the Syrian ranges discoverable everywhere "by its mass of vegetation, willow, poplars, hawthorn, walnut, hanging over a rushing volume of crystal water, the more striking from the contrast of the naked

desert in which it is found." There is, high up this stream, a mountain gorge or pass, called the "cleft of the Barada," crossed by a single arch called the "Bridge of Sonk." On the right bank is a lofty hill, on whose summit are 7 Syrian oaks. These oaks, according to a tradition of the country, had a very singular origin. The 2 sons of Adam, Habid and Habil, divided the world between them, and set up boundary stones on this hill. Habil moved the stones. Habid threw them at him and killed him. Not knowing what to do with the body, he carried it on his back for 500 years, until seeing one bird kill another, and bury it in the ground, he dug a grave for Habil, and stuck up his staff to mark the spot. From this staff grew the 7 oaks. At the head of this pass stood anciently the city of Abila, the capital of the ancient Abilene. This pass was also the scene of a great battle in the Mussulman conquest of Syria.

BARAGUAY-D'HILLIERS, ACHILLE, a marshal of France, born Sept. 6, 1795. He served as 2d lieutenant during the Russian campaign, became in 1818, aide-de-camp to Marshal Marmont, and fought valiantly at the battle of Leipsic, where he had his left hand carried away by a cannon ball. He was a captain on the fall of the empire, though not yet 20 years old. Adhering to the restored Bourbons, he entered at once the royal guards, served through the campaign of 1823 in Spain, was afterward attached to the army which conquered Algiers in 1830, and then promoted to a colonelcy. His advancement was comparatively slow during the restoration, but was more rapid under Louis Philippe. He was first called to the governorship of the military school of St. Cyr, where, in 1838, he suppressed a republican conspiracy, in consequence of which 2 young men, De Treveneuc and Guinard, who were to play quite a conspicuous part in subsequent revolutions, were expelled. In 1836 he was made brigadier-general, sent to Algeria 5 years later, and made governor of the province of Constantine, where, in consequence of his lost arm, he was called by the Arabs *Bou-dru* or the "father of the arm;" and in 1844, promoted to the rank of lieutenant-general. Returning to France in 1847, he was appointed general-inspector of infantry. On the outbreak of the revolution of 1848, he was ordered by the provincial government to Besançon, to take the command of the 6th military district, and a few months later appointed chief of the 2d division of the army near the Alps. Elected to the constituent assembly by the department of Doubs, he resisted the attack directed, on May 15, by a revolutionary mob against the national representatives; but a little later, during the fatal days of June, he declined to take the command of the troops in place of Gen. Negrier, who had just been killed, under the pretext that he had enough responsibility as a deputy. He was already connected with the so-called conservative party, and soon became president of the monarchical club, known as the

Réunion de la rue de Poitiers, expressing on several occasions his abhorrence of red republicanism, and his readiness to help in the overthrow of the tottering government. With such feelings, his natural course was to join the Bonapartists; which he did, and was soon set to work. On the recall of Oudinot, commander of the French army in Rome, Baraguay d'Hilliers was his successor, being beside appointed as envoy extraordinary to the pope. He returned to France to be appointed, Jan. 9, 1851, chief of the army of Paris, in place of Changarnier, who was distrusted by Louis Napoleon. In this post he made a great flourish of his unbounded respect for discipline, which he intended to maintain with severity, and at the end of six months he resigned, as being a member of the legislative assembly, he had no right to hold another office for a longer period. When the *coup d'état* of Dec. 2 occurred, he immediately proffered his services to Louis Napoleon, and his eagerness was richly rewarded. He received the grand cross of the legion, entered the senate, of which he became vice-president, was sent as ambassador to Sweden, then envoy extraordinary to Constantinople, and lastly, promoted to the rank of marshal of France. — LOUIS, a French general, father of the preceding, born at Paris, Aug. 13, 1764, died at Berlin in 1812. A lieutenant in the regiment of Alsace, on the beginning of the French revolution, he was appointed brigadier-general in 1793, and chosen by Custine as the head of his staff. His fidelity to that unfortunate chief brought him into serious danger: he was put in prison, but happily escaped a condemnation, and was liberated after the 9th Thermidor. He served under Napoleon during his first 2 campaigns in Italy, where he displayed such skill and bravery, that he was promoted to the rank of division-general. In 1796, he joined the army at the camp of Boulogne, and occupied various military posts until 1800, when, being already grand officer of the legion of honor, he was appointed commander of the dragoons in the army which invaded Austria and distinguished himself, especially, at Scharfart, Elchingen, and on the frontiers of Bala-mia. He was sent to Italy in 1806, as governor of Friuli, then of Venice in 1808; and afterward participated in the victory of Raab (Eugeny), won by Eugene Beauharnais over 120 Austrian troops, June 14, 1809. During the following 2 years he served with no less distinction in Spain, where he was attached to the French army in Catalonia. On July 8, 1811, he was put in command of a division of the grand army, against Russia, and was so unhappily as to be captured with nearly all his forces by the enemy. An inquest upon his conduct was ordered by Napoleon, at which he was aggrieved that he fell sick and died heart-broken at Berlin, when only 49 years of age.

BARAHAT, a town of northern Hindostan, the capital of the British district of Gurjara. It was nearly destroyed by an earthquake in

1808. It is a halting station for the pilgrims on the way to Gangootri.

BARAILON, JEAN FRANÇOIS, a physician and member of the national convention of France, born at Vierzat, in Auvergne, Jan. 12, 1748, died at Chambon, March 14, 1816. The early part of his life was devoted to the practice of his profession, but in 1792 he became a deputy to the convention, and for 14 years succeeding he was a busy participator in the various legislative bodies which were formed within that time. He was distinguished for his sincere love of liberty, and the boldness with which he denounced measures and men, when he conceived that it was for the benefit of the republic. He did not hesitate to accuse Robespierre, when at the height of his power, of arrogance and ill concealed ambition. Retiring from public life in 1806, he devoted himself to the practice of his profession and to archaeological studies. He has written several treatises on professional and political subjects.

BARAK, a river of Cachar, further India, 50 miles long and in some places 200 yards wide. Its depth during the rainy season is from 10 to 40 feet. It follows a very tortuous course, and after receiving the waters of the boormah and several smaller streams, unites with the Bramapootra, 48 miles N. E. of Deoca.

BARALT, RAFAEL MARIA, a Spanish American writer, born at Maracaibo at the beginning of this century. His chief work is a geographical and historical account of Venezuela from its settlement by the Spaniards to the year 1837, which is now said to be out of print. It contains much valuable information. Baralt was recently one of the editors of the *Olamor Público*, published at Madrid.

BARAM, a river and territory of the sultanate of Brunai, on the N. W. coast of Borneo. The mouth of the river is in lat. 4° 30' N., long. 113° 50' E., and 50 miles S. W. of city of Brunai. It is obstructed at the mouth by a bar, which will not permit vessels drawing more than 11 feet of water to pass; but inside, is navigable for a steam frigate for 100 miles. At several points near the upper navigable portion of the stream, large deposits of fossil coal and of iron, both of excellent quality, have been found; and can be mined and shipped very advantageously. The soil of the territory seems well adapted for sugar culture; it is not heavily wooded, like the greater portion of the island; but has extensive prairies, covered with *allang allang* grass, in which wild cattle, hogs, and deer abound. The inhabitants of the territory are Gayan Dayaks, the most energetic, and the most advanced of the barbarous aborigines; notwithstanding their piratical and headstrong propensities, they have shown a very friendly disposition to the few Europeans who have visited them.

BARANCA NUEVA, a flourishing town of New Granada, at the junction of the Mahates with the Rio Magdalena. It is on the transit route, between Magdalena and Carthagena.

BARANOFF, ALEXANDER ANDREAS VITH, governor of the Russian possessions in North America, was born in 1746, and died in 1819. Early in life he was engaged in commerce in western Siberia, but was induced to try his fortune on the American continent, where he established himself at Kodiak, and opened a trade with the natives. In 1796, he founded a colony for commercial purposes at Behring straits, and in 1799, after contending with numerous obstacles, took possession of the largest of the Sitka group of islands. His efforts finally gained him the support of the Russian American company and a title of nobility from the emperor Alexander. He next built a large factory at Sitka, and opened commercial relations with Canton, Manila, Boston, New York, California, and other places, and even established a small colony near what was then the Spanish mission of San Francisco, in Upper California, of which no traces remain at the present day. Worn out by a life of constant toil, no small part of which had been passed on the ocean, he at length applied to the government for leave to return home, but was only permitted to leave his colony in 1818. Touching at Batavia, he sank under the effects of the climate and died at the age of 73.

BARANOVITCH, LAZARUS, a Russian theologian who died in 1698. He was a distinguished champion of the Greek church against the Polish Jesuits, and by his influence quelled a revolt among the Cossacks. He wrote theological treatises and poetry.

BARANTE, AMABLE GUILLAUME PROSPER BRUGÈRE, baron, a French historian, born at Riom in Auvergne, June 10, 1782. His great-grandfather and his father were in their time scholars of some reputation. Under the supervision of the latter, young Prosper received a thorough classical education, and was afterward admitted to the newly created polytechnic school. Entering the public service in 1802, he occupied, during the empire, several offices at home and diplomatic missions abroad. He was prefect of Lower Loire on the fall of Napoleon, made his submission to the Bourbon king and kept his post, which he resigned when the emperor reappeared in March, 1815. His fidelity to his new master was rewarded by his being appointed a member of the council of state and general secretary of the home department. Soon afterward he became director of the *Contributions indirectes*. In 1819, he was made a peer of France, and his ambition seems to have been fully satisfied with that honor. Most of his time was now given to literary pursuits, which he had never neglected. As early as 1808 he had published anonymously his *Traité de la littérature française au 18 siècle*, a very able sketch of the literary men of that philosophical century, which has since reached its 8th edition. He had been also a sort of amanuensis to Mme. de la Rochejaquelein, whose *Mémoires* on the war in the Vendée appeared in 1814; the greater part being undoubt-

edly from his pen. During the leisure secured to him by the peerage, he seems to have been first engaged in translating from foreign languages: in 1821 he published his French version of Schiller's dramas, and was, a little later, a contributor to the *Collection des théâtres étrangers*. Then he devoted his whole time to the great work which was to become the most solid foundation of his fame, *L'histoire des ducs de Bourgognes de la maison de Valois*. This book, which embraces the most dramatic period of French history, was written according to the theory embodied in the motto which he borrowed from Quintilian: *Scribitur ad narrantum, non ad probandum*. It is a very skilful arrangement of the memoirs of old chroniclers, especially Froissart, Monstrelet, and Comines, preserving all their good qualities, correcting their faults, making up their deficiencies, giving clearness to their somewhat confused delineations, and in a word placing their improved pictures under the most favorable light. It has been justly considered a model of purely narrative history, and has greatly contributed to diffuse the taste for historical study, so powerfully enhanced by the more masterly performances of Guizot and Augustin Thierry. Published from 1824 to 1828, this history opened to him the doors of the French academy, where he took the seat of De Séze, the eloquent defender of Louis XVI. before the national convention. After the revolution of 1830, Barante was appointed ambassador to the court of Turin, but still pursued his wonted occupations, giving in 1834 to the public his *Mélanges littéraires* in 3 volumes, consisting of essays upon various literary characters. In 1835, he went as minister of France to Petersburg, but the revolution of 1848 brought him back to his favorite pursuits. After having published in 1850 a political pamphlet called *Questions constitutionnelles*, he completed his *Histoire de la convention nationale* in 6 volumes, and is now engaged in finishing *L'Histoire du directoire de la république française*. Both these histories are written from a monarchical point of view. They cannot compare with those of Thiers, Michelet, or Louis Blanc; but are nevertheless read with pleasure and profit. Although Barante is not entitled to the first rank, he holds a respectable place among contemporary French historians and literary men.

BARANTOCHINSKI, a mining village of Russia, at the E. base of the Ural mountains, in the government of Perm, 58 miles S. S. W. of Verkhotoic. It has mines of iron and iron works, which belong to the government.

BARANYA, a fertile county of Hungary, lying on the Danube; area, 1,980 sq. m.; pop. 233,850. The capital is Fünfkirchen; chief products, wheat, tobacco, wine, and fruit.

BARANZANO, GIOVANNI ANTONIO, surnamed Redemptus, a Piedmontese philosopher, born at Serravalle, in the province of Vercelli, in 1590, died in 1623. He became a monk in 1609, and was made professor of philosophy at

Anney. He was remarkable for his boldness in discovering new systems, and particularly in rejecting the doctrines of Aristotle. He corresponded with many distinguished men, including Bacon, one of whose letters is addressed to him. He was also famous as a preacher. His published works are mostly philosophical treatises.

BARAS KHOTUN, or **BARAS KHOTAN** (the city of the tiger), a large town now in ruins, on the river Kherlon, in the country of the Mongols, in lat. 43° N., and long. 113° 43' E. The only European who has visited it was Father Gerbillon, who found only extensive remains of mud walls and 2 decayed pyramids. In the 14th century it was a flourishing town, nearly 7 miles in circuit, and the seat of the Mogul empire under Toghon Timour. The causes of its abandonment and decay are unknown.

BARATARIA BAY, an arm of the gulf of Mexico, in the S. E. part of Louisiana, between the parishes of Jefferson and Plaquemine. Length, 15 miles; breadth, 6 miles. It was formerly a great resort for pirates.

BARATIER, JEAN PHILIPPE, a precocious youth, born at Schwabach, near Nuremberg, in 1721, died at Halle in 1740. He was the son of a Protestant pastor, who had fled from France on the revocation of the edict of Nantes. Before his 5th year, he had learned to read and write the French, German, and Latin languages, and he then made rapid progress in Greek, Hebrew, Syriac, Arabic, and Ethiopic, which he mastered almost entirely by solitary and unassisted study. He applied himself to theology, ecclesiastical and secular history, philosophy, mathematics, and particularly to astronomy. In his 13th year he published a translation from the Hebrew of the "Travels" of Benjamin of Tudela, to which he added notes and historical dissertations, and in his 14th year he received from the university of Halle the degree of master of arts, on which occasion he defended 14 theses in the presence of more than 2,000 spectators, and caused universal astonishment. The king of Prussia made him an annual allowance of \$50, presented him with books and mathematical instruments, and gave to his father a living at Halle, where he wished the son to study law. But the rapid development of the young man's powers proved fatal to them, and after having published several learned mathematical, critical, and theological works, and while still engaged upon treatises on Egyptian antiquities and the lives of St. Hippolytus and St. Jerome, he died at the age of 19, after enduring great suffering.

BARATYNSKI, JEWGENI ABRAM, one of the most distinguished of the Russian poets, died in Sept. 1844. His poetic genius was developed during a military service of 8 years in Finland. "Eda," the first offspring of his muse, is a spirited poem, with strong local coloring and Finnish characteristics. Released from exile, the poet removed to the neighborhood of Moscow, where he passed the remainder of his life. His most agreeable poem is the

"Gypsy," a charming and graceful production, giving a pleasing picture of the best features of Russian high life. His poems were published in 2 vols. in 1833.

BARB, the African variety of that purest type of the equine family, usually known as the Arab or oriental horse; although it is an ascertained fact, that Arabia is one of the latest countries, in point of time, in which the horse was domesticated. The principal varieties of the oriental horse, which is the origin of the English and Anglo-American thorough-bred horse, and on the greater or less proportion of whose blood in the veins of any given horse, for any given purpose, the heaviest draught-work alone excepted, the excellence of the animal depends, are the barb, the Arab, the Turk, and the Persian; and to the fact that he is descended, not from one, but from the carefully mixed blood of all these varieties, is it ascribable that the modern thorough-bred is so far superior to all the different species of his progenitors, that no one of them can contend with him in the race, either for speed or distance, and that, for many years, any further admixture of their blood has injured rather than improved the quality of the progeny. The high-bred horse is of great antiquity in Persia, Parthia, Egypt, and Syria or Phœnicia, as is shown by the pages of classic history. To the Numidian barbs, on which their cavalry was mounted, did the Carthaginians owe their victories over the Romans; and the Moors their successful invasion of Spain. By these two invasive powers the horse of Spain, in general, and of Andalusia, in particular, was largely intermixed with pure barb blood; so much so that, in the early times of the racing turf and of efforts to improve the quality of the European horse, it was to the Andalusian Spaniard, which was then nearly a pure barb, that recourse was had by the early breeders. When oriental blood began to be sought for, directly, in England, and horses were imported from the southern and eastern shores of the Mediterranean, it was chiefly to Tangier and the Barbary coasts that the Stuart monarchs, who were the first systematic patrons of the race horse in Europe, had recourse—partly, doubtless, because the former city was then occupied by English forces, but partly, also, because the barb was then preferred to the Arab strain. The Percheron breed of the Norman horse is also largely impregnated with barb blood, introduced by means of Andalusian stallions, purposely imported in order to improve and lighten the strain of the old Norman war-horse, at a very early period. William the Conqueror rode a Spanish war-horse at the battle of Hastings; and the same breed was continually imported into England by the Anglo-Norman kings, as were Syrian and Turkish horses by the crusading Plantagenets. The barb is generally somewhat larger than the Arab of the desert, and has a loftier and more distinguished crest and forehead; and there is

one variety, the jet-black barb of Dongola, from the vicinity of Nubia and Abyssinia, which is said rarely to fall short of 16 hands in height. The marquis of Newcastle, who commanded the king's forces at Marston moor, and was subsequently governor, or tutor, to Charles II., while prince of Wales, published the earliest work on horsemanship, which is of much note in England, in the year 1667. It is still a book of high authority. In it he says of the barb: "The barb is next to the Spanish horse for wisdom, but not near so wise, and that makes him much easier to be drest.* Beside he is of a gentle nature, docile, nervous, and light. He is as fine a horse as can be, but somewhat slender and a little lady-like; and is so lazy and negligent in his walk, as he will stumble in a bowling green; he trots like a cow, and gallops low, and no action in any of those actions. But commonly he is sinewy and nervous, and hath a clean strength, is excellently winded, and good at length, to endure great travel; and very apt to learn and easy to be drest, being for the most part of a good disposition, excellent apprehension, judgment, and memory; and when he is searched and awakened, no horse in the world goes better in the manège, in all ayres whatever, and rarely upon the ground in any." Again he says, in speaking of breeding racers, after giving directions, which are perfectly sound to this day, for the selection of mares: "Your stallion, by any means, must be a barb, and somewhat of the shape I have described the mares to be of. For a barb that is a jade, will get a better running horse than the best running horse in England; as Sir John Fenwick told me, who had more experience than any man in England; for he had more rare running horses than all England beside, and the most part of all the famous running horses in England, that ran one against another, were of his breed." It is very questionable whether Newcastle's opinion is not wholly right, and whether the greater share of the best blood of the modern thorough-bred is not ascribable to the barb, as will appear by the following list of progenitors: The Godolphin, long called an Arabian, to whom more famous horses trace than to all other bloods, is ascertained to have been a barb, believed to be a present from the emperor of Morocco to Louis XIV., the Ourwen bay was a barb; Chillaby was a barb; King William's no-tongued stallion was a barb; Hutton's Gray was a barb; Fenwick's horse was a barb; Hutton's Bay was a barb; St. Victor's famous horse was a barb; Fairfax's Morocco horse was a barb; Rutland's Black was a barb; Massey's Black was a barb; the Taffolet was a barb; Harpur's horse was a barb; Grayhound was a barb; Dodsworth was a barb, both bred in England. But what is more to the point, is this—that of the import-

* Dressed, in the English of those times, signified broken, or trained to the manège, not as we use it, meaning cleaned by hand.

ed oriental mares, to which all the race-horses, English and American, of the present day trace, four-fifths are barbs. All King Charles II.'s royal mares were barbs, from Tangier; Layton's violet mare was a barb; the Arlington mare, the Moonah mare, and the Darcy mare were barbs; the dams of Dodsworth, Grayhound, Spanker, Brimmer, Bustler, Careless, of Trumpet's dam, of Miss Layton, of old Bald Peg, and, in a word, of three-fourths of all the best progenitors and progenitrixes, of the stud book, are barb mares. For other purposes than racing, the barb has not degenerated to the present day. The splendid resistance of Abd el Kader to the French is ascribable to his barb-mounted cavalry; and the French *chasseurs d'Afrique*, probably the finest regiment of light cavalry in the world, are mounted on barbs from the province of Algiers. The wild horses of the American prairies and South American pampas are of Spanish barb descent, some, probably, the remote progeny of Ponce de Leon's and Fernando de Soto's Florida expeditions, and the others of the Spanish cavalry horses liberated at the siege of Buenos Ayres. The common Canadian horse has also a remote barb strain, through his Norman parentage, to which he doubtless owes his hardihood, and the peculiar excellence of his feet and legs.

BARBACAN, in Norman castellated architecture an external fortification or outwork, in some degree corresponding to the modern *tête-de-pont*, erected on the outer side of the moat, to protect the first access to the drawbridge, when lowered. It was usually, in form, a half moon, or 8 sides of an octagon, having its convex or salient sides looking outward, and open to the rear, so as to afford no shelter to the assailants of the castle or town, if carried. The two extremities touching on the moat, were defended by towers built out into the deep waters of the ditch, so as to afford no footing around them; and the gateway was situated deeply embayed between other towers, and under machicolated battlements, which crossed a concentrated fire on it. Add to this that the drawbridge and barbacan themselves were usually placed at the bottom of a retiring angle, between the flanking walls and towers, which could thus cross their missiles even on the outer side of that defence.—Beyond the barbacan, again, were often erected barriers, as they were called, or strong palisaded abatis, in the attack and defence of which occurred many of the most gallant exploits and adventures of the chivalrous heroes of Froissart, Monstrelet, and Brantôme's picturesque and stirring chronicles.

BARBACENA, a town of Brazil, in the Sierra Mantiqueira, 3,500 feet above the sea. The inhabitants are chiefly engaged in mining for gold and in exporting cotton and coffee to Rio de Janeiro.

BARBACENA, FERREIRO CALDEIRA BRANT, marquis, a Brazilian marshal and senator, born at Sabora in 1772, died at Rio Janeiro, June 10, 1842. He had already distinguished him-

self in the Portuguese military service on land and sea, when he was appointed by the prince regent of Brazil, upon becoming emperor, to negotiate with the mother country the independence of that province. His success in this matter secured him the title of marquis. He afterward accompanied the young queen of Portugal to Lisbon, and was twice minister of finance. Brazil is indebted to him for introducing into the country the first printing press.

BARBADILLO, ALFONSO GERONIMO DE SALLA, a Spanish poet, novelist, and dramatist, was born at Madrid, about 1580, and died in 1630. He was a poor man, although attached to the court, and is chiefly known from his intimacy with Cervantes, whose novels, upon their first appearance, he praised highly. Barbadillo wrote in a pure Castilian style, and his novels and some of his plays are national in their character and not devoid of humor. He was most successful in his caricatures of society and manners, in which he imitated Cervantes. His works are numerous.

BARBADOS, or BARBADOES, the most eastern of the Caribbee islands, and the earliest settled and improved of all the English possessions in the West India, situated 70 miles E. from St. Vincent, and about 200 miles N. E. from Trinidad. It is of an oval form, 22 miles in length, and 14 in width, with an area of 106,470 acres, most of which is under cultivation. The surface, except in the N. E. part, is not much diversified with hills and valleys, and though there are several small streams, the absence of mountains in the centre renders this island less copiously watered than the other Antilles. It rises abruptly on the N. E. to a height of 50 or 70 feet, Mount Hillaby, the highest elevation, having an altitude of 1,147 feet above sea-level. It consists of tertiary sandstones and limestones, and of rocks formed of an aggregate of shells, madrepores, and different kinds of coral, partly consolidated by the accumulation of water, and partly porous and full of cavities. Petroleum exudes from many of the clay hills, and saline springs are found at considerable heights above the sea. There are no precious metals and no fossil remains, but bituminous coal, potter's clay, and yellow and brown ochres, are found in abundance. The soil, composed of a fine black mould, is well fitted for the culture of sugar, and the rich plantations extending over gentle hills present a delightful landscape. It is nearly encircled by a coral reef at about 2 miles from the shore, by which navigation in its vicinity is rendered dangerous. Being further out in the Atlantic than the neighboring islands, it is peculiarly exposed to the scourge of hurricanes. By one of these in 1780, which lasted for 48 hours, more than 3,000 human beings perished, and property to the amount of nearly \$5,000,000 was destroyed. In the great storm of 1831, it suffered even more severely in the loss of property. Yet the climate is in general especially healthful though warm, it being tempered by the trade wind.

from the N. E. which blows from 10 o'clock in the morning till sunset. The cultivation also of almost every spot on the island prevents the prevalence of injurious miasmata. The staple productions are sugar, molasses, arrow-root, aloes, and cotton; and the amount of property annually created is estimated at more than \$10,000,000. About 40,000 acres are planted only with the sugar-cane. In 1852 the amount of sugar produced was 48,785 hogsheads, valued at \$3,829,000. In exchange for the native productions there are imported into the island cured fish, salted beef, flour, cutlery, and cotton, woollen, and linen goods. Barbados has an excellent harbor, in Carlisle bay, off Bridgetown, which serves not only for the trade of the island, but also as a landing-place for vessels, which, in consequence of its easterly position, reach it before any other of the islands, and touch there for refreshment. The island has but 4 towns, Bridgetown, Charlestown, St. James, and Speights; the first of which is the capital, and one of the gayest and handsomest towns and one of the strongest military posts in the West Indies, containing above 20,000 inhabitants. Barbados is more densely populated, probably, than any other spot of land in the world, excepting the island of Malta. It has at present about 145,000 inhabitants, 85,000 of whom are emancipated negroes, which gives 878 persons to a square mile. Like the other West India islands which were acquired by settlement, it is governed by a governor, a council, and an elective assembly. The governor, who is also governor-general of Grenada, St. Vincent, Tobago, Trinidad, and St. Lucia, is invested with the chief civil and military authority. The council consists of 8 members, who are appointed by the crown, and have the same rank in the colonies as the peerage in England. The assembly is composed of the representatives of the people, who are chosen annually, 2 for each of the 11 parishes, and 2 for the city of Bridgetown. There are in the island 29 public schools, which are attended by 7,077 pupils. The chief of the institutions of education is Codrington college, founded by Gen. Codrington about the beginning of the last century for the propagation of Christian knowledge, and beautifully situated on the borders of the wild and hilly district called Scotland. It has an annual revenue of \$16,500. Six newspapers are published on the island, one of which, the "Barbados Mercury," has existed for over a century. There is much uncertainty about the first discovery of Barbados, but it was probably visited by the Portuguese as early as 1586. It was visited by an English ship early in the 17th century, but no permanent settlement was made till 1624, when a few adventurers from England established themselves upon it. During the period of the civil wars it afforded a refuge to persons of various parties, who successively suffered persecution. In 1692, and again in 1816 and in 1825, formidable organized insurrections of the negroes took place on this island,

and the abolition of slavery in the West Indies by the British parliament in 1834 was received here with perfect tranquillity. Barbados has made rapid progress both in the last and the present century, and it is now, after Jamaica, the most valuable and important of the British islands in the Caribbean sea.

BARBALHO-BEZERRA, Agostino, Brazilian traveller, born at St. Paul, died about 1669. In 1664 he was appointed general superintendent of the mines of Brazil, by an ordinance of Alfonso VI., and was specially directed to explore the vast forests of the interior, in quest of mines of precious stones. Here he wandered for years, always expecting to grasp the prize, and always disappointed, until he fell a victim to the malignant fevers of the country. His explorations have been of some use to the geographer and the naturalist.

BARBANÇON, MARIE DE, a French heroine, who lived in the latter half of the 16th century. After the death of her husband, Jean de Barret, lord of Allier, she was besieged in his castle of Bernegon, in Berry, by Montargis, the governor of Bourbonnais, and her heroic defence of the place during a siege of 15 days won her no little renown. She was finally compelled by hunger to surrender, but on her own terms, and the ransom exacted from her was remitted by the king, who restored her to her possessions.

BARBANÈGRE, JOSEPH, baron, a French general, born at Pontacq in 1772, died at Paris, Nov. 9, 1830. In 1794 he entered the army as captain of the volunteers of his department, was wounded in his first campaign, and remained till after the 18th Brumaire without advancement. He then passed into the consular guard, and in the next year was appointed colonel and signalized his valor at the battle of Austerlitz. He was named brigadier-general in 1809, was engaged in the battles of Jena, Eylau, Ratisbon, and Wagram, and had a command in the rear-guard during the terrible retreat from Russia. Though wounded severely, he succeeded in shutting himself up with his corps in Stettin, and yielded up this place only after the abdication of Napoleon. In 1815, he was sent for the defence of Huningue, but the feebleness of the garrison and the poor state of the fortifications, made resistance to a serious attack impracticable. Yet he inspired such enthusiasm in the invalid defenders, and presented so formidable a display, that, after the battle of Waterloo, he capitulated upon favorable terms, and marched out with all the honors of war. He passed the latter years of his life in retirement and quiet at Paris.

BARBARA, SAINT, a virgin and martyr, much honored in the Greek and Roman Catholic churches, and supposed to have flourished in the 3d or early part of the 4th century. Her history has been related by various chroniclers, but with so many discrepancies that it is difficult to ascertain either the events of her life or the circumstances of her martyrdom. According to Jacobus de Voragine, the author of the

Aurea Legenda, she was born at Heliopolis, in Egypt, of pagan parents. On arriving at the age of womanhood she was very beautiful, and her father, fearing lest she should be taken from him, confined her in a tower, on which account, in the pictures of this saint, the tower is one of her most frequent attributes. In her seclusion she heard of the preaching of Origen, and wrote to him, begging for instruction, whereupon he sent one of his disciples, who taught and baptized her. On learning this her father was so incensed that he put her to death. Metaphrastes and Mombritius inform us that she was martyred at Heliopolis in the reign of Galerius, and their account agrees with the emperor Basil's Menology and with the Greek Synaxary. Others again hold that she suffered at Nicomedia, in 285, under Maximian I. Her festival occurs Dec. 4.

BARBARELLI, GIORGIO, one of the founders of the Venetian school of colorists, born at Castelfranco, near Treviso, in 1477, died of the plague in 1511. He is more generally known by the name of Giorgione, according to Lanzi, from a certain grandeur conferred upon him by nature, no less of mind than of form. He was educated in the school of the Bellini, at Venice, where Titian was one of his fellow-students, but following the bent of his genius, he broke away from their stiff and constrained manner, and formed a style of his own, distinguished by boldness of outline, grace and expression in the countenances, as well as the motions of his figures, well graduated and rich coloring, and effective chiaroscuro. The last of these he probably acquired by studying the works of Leonardo da Vinci, although he approaches the style of Corregio more nearly than that of any other Italian painter. Giorgione's works in fresco, of which he executed many on the façades of Venetian palaces, are almost entirely obliterated, but his portraits in oil, among the most admirable ever painted, and remarkable for the warmth of their coloring, particularly in the flesh tints, as well as their grace and animated expression, are in good preservation, although, on account of the early death of the artist, they are not numerous. Of his historical paintings, the "Moses rescued from the Nile," in the Pitti palace at Florence, is esteemed his *chef d'œuvre*. Titian had a great admiration of Giorgione's style, and followed it previous to forming his own.

BARBARIAN, a term originally applied by the Greeks to a language which they could not understand, and so by a figure of rhetoric to the person speaking. In this sense it appears to have been used by Paul, 1 Cor. xiv. 11. The word was probably coined by the Greeks, and is one of those words whose sound is intended to be expressive of the idea. It was, therefore, a term of reproach. In its first application to persons it included all not Greeks. Later, when Rome took the Greek civilization and language, it was applied to all but Greeks and Romans, or rather the term Greeks was

enlarged to take in the Romans. So Paul uses it in Rom. i. 14, 15. In modern times it is used to express, together with several other terms, the degree of civilization to which a nation has attained. In this use, barbarous is one degree above savage, and stands below half-civilized, while civilized and enlightened complete the scale on which civilization is reckoned.

BARBARIGO, GREGORIO, an Italian cardinal, born at Venice, Sept. 25, 1625, died at Padua in 1697. He was destined for public life, but after a course of theology at Padua, entered the church, and was attached as canon to the pope's chapel, in which capacity he discharged several missions with such zeal that he was appointed to the bishopric of Bergamo, where his benevolence won him the title of the 2d Charles Borromeo. He was made cardinal, and afterward bishop of Padua, where he established an institution for learning on the most liberal scale. His literary remains consist of 25 letters on historical subjects.

BARBARO, FRANCESCO, an accomplished Venetian, born in 1398, died in 1454. He was of a noble family, and occupied several distinguished official positions, but is chiefly known from his literary labors, among which may be mentioned a translation of Plutarch's lives. He also wrote a work on the choice of a wife and the duties of women, entitled *De Re Uxor.*, printed in Paris in 1515. His letters were collected and published in 1748.—His grandson of the preceding, and equally distinguished for learning, born in Venice in 1454, died in 1498. He was educated at Padua, and before his 30th year had acquired so great a reputation, by a translation of the *Paraphrases* of Themistius, and a funeral oration pronounced over the doge Nicolo Marcello, that he was appointed professor of philosophy and doctor of civil law at Padua. Returning to Venice in his 30th year, he was made a senator, and fulfilled several important missions; but happening to incur the displeasure of the republic by accepting from Pope Innocent VIII. the patriarchate of Aquileia, he was condemned to perpetual banishment, and died in exile. His principal work is the *Costigaciones Plinias*, an illustration of the natural history of Pliny, beside which he translated Dioscorides and Aristotle, and wrote some poetry.

BARBAROSSA, emperor. See FRANK I. of Germany.

BARBAROSSA, HORUSH, ABOUD, ARCEUS HORVUS, a celebrated pirate of Algiers, born in 1717 the son of a Greek renegade from Lesbos, who settled in Algiers, and worked at pottery. His son became a sailor, and commanded a fleet at 21 years of age. The name of Barbarossa was given him in after life by his sailors, *Baba Ebi* "Father Captain," as a title of respect, and corrupted by the Italians into Barbarossa. He was called in to the aid of Selim I. against the Spaniards, 1516. He murdered Selim, and made himself despot of Algiers. He

next conquered Tunis and Tlemcen. His career was cut short by the Spanish marquis of Gomarez, governor of Oran, whom the heir of the Tlemcen dominions had called in. He was besieged, and made his escape from Tlemcen by a subterranean passage, was overtaken and after a brave and desperate resistance was slain in 1518.—He was succeeded in the government of Algiers by his brother, KHAIR-ED-DEEN ("Good of the Faith"), a name given him by the sultan Solyman. On the death of Barbarossa, the Turks proclaimed him sovereign of Algiers. Khair-ed-Deen was attacked by the Spaniards, but the expedition was destroyed by a storm, and those who had landed were taken prisoners. Dreading a renewal of the attack, Khair-ed-Deen offered homage to the sultan Solyman, who appointed him pasha of the new territory, and sent him a reinforcement of 2,000 janizaries, and in 1530, the new chief succeeded in taking the island in the bay of Algiers, when he put all the garrison to death. In 1532, the people of Tunis rebelled against Muley Hassan, the old benefactor of the brothers Barbarossa, and invited Khair-ed-Deen to take the command of their territory, which he did. Solyman now appointed Khair-ed-Deen his capudan pasha to encounter the Genoese Doria. A war of piratical attacks and desolating ravages now commenced with various success, but the emperor Charles V. having landed on the coast of Africa with a powerful force, Tunis was attacked, and Barbarossa compelled to escape to Algiers, whence he put to sea, and ravaged the coast of Spain. The Venetians now joined the confederacy against the Turks, and Andrea Doria and Khair-ed-Deen were on the point of coming to an engagement at the gulf of Arta, but jealousies among the allies prevented a battle, and Doria retreating, the Turks captured several of his rearmost vessels. In 1542, Francis I. with a view of curbing the exorbitant powers of the emperor Charles V., sent an embassy to Solyman, and his Christian Majesty having joined his forces with those of the Grand Turk, ravaged the states of the church, and attacked Nice, which was obliged to capitulate. Barbarossa's fleet visited Marseilles, where he was received with every demonstration of honor and respect. Barbarossa returned to Constantinople in 1544, and died in 1546.

BARBAROUX, CHARLES, a member of the French national convention, and a leading Girondist, born at Marseilles, March 6, 1767, guillotined at Bordeaux, June 25, 1794. Being originally devoted to scientific pursuits, he maintained for some time a correspondence with Benjamin Franklin, and published an interesting paper on the extinct volcanoes in the vicinity of Toulon. As a lawyer, he had gained the reputation of being one of the most eloquent members of the bar at Marseilles, when the revolution broke out. He at once declared himself a republican, and was, in 1791, sent by his native city as deputy extraordinary to the legislative assembly. He was admitted to the

Jacobin club, where he became acquainted with Brissot-Warville, Vergniaud, and Gensonné, the most influential members of the society at that time. He joined them in their efforts for the triumph of republicanism, and was by one of them introduced to Roland, then home secretary, whom he frequently visited. Barbaroux was of uncommon personal beauty; he had beside that enthusiastic fire which is characteristic of his countrymen, and it was rumored at that time that he had fallen in love with the beautiful Madame Roland, who was, they said, but too yielding to his affections; this is undoubtedly a base calumny, both being united only by the ties of friendship and devotion to freedom. Both were dreaming of a republic founded on virtue, and both were virtuous. When it was feared that the court would succeed in arresting the revolutionary movement in the north of France, Barbaroux was the most vehement in supporting the plan of establishing a separate republic in the south. He was at the same time actively engaged in all the popular measures tending to promote the revolution, and took, with his 500 countrymen, who were especially called *Les Marseillais*, an important part in the insurrection of August 10, which was the death-blow of the French monarchy. As a reward for his energetic conduct, he was elected chairman of the electoral meeting, and afterward a deputy to the convention. There he expressed his abhorrence of the merciless and bloody policy of Marat and Robespierre, and energetically demanded an act of accusation against the promoters of the massacre of September. Henceforth he excited the anger of the Mountain party, which pursued him to his death. But his moral activity was not confined to purely political struggles; a learned economist, he threw light on controverted questions of general administration and commerce; he opposed the forced loan of 1,000,000,000 livres, voted against the tax on breadstuffs, and presented wise plans for the use of public money, the regulation of supplies for the army, and the organization of the war administration. When the trial of King Louis XVI. came on, he voted for the king's death, but with an appeal to the nation. This last vote was followed by an outburst of indignation from his enemies, who presented petitions to the convention asking for his dismissal as a traitor to the republic. His fate, as well as that of his friends, the Girondists, was already sealed; a popular insurrection broke out against the convention May 8, 1793, insisting upon their proscription, consequently, June 2, the assembly adopted the resolution for the arrest of 84 of its members, mostly Girondists. Barbaroux then left Paris with some of his colleagues, went to Normandy, and tried to raise an insurrection against the convention. It was then that, during a sojourn at Caen, he had occasion to meet Charlotte Corday, who manifested a deep interest in his misfortune, and he was even accused of having inspired the heroic girl with her murderous pro-

ject against Marat. But the insurrection was soon suppressed, and Barbaroux, hunted from place to place, sought a refuge in the vicinity of Bordeaux. Being discovered there, he shot himself twice, but though in a dying condition, he preserved life enough to be identified and sent to the scaffold by the revolutionary committee of Bordeaux. Seldom has the rage of party immolated a purer victim.

BARBARY STATES, the name by which a somewhat indefinite tract of country is designated, extending between 10° and 26° E. long., and with an average breadth of about 5°. It stretches in a curve from the Atlantic coast of Africa, along the southern shores of the Mediterranean to the possessions of Egypt in the east, a distance of more than 2,000 miles, and covering an area of at least 600,000 square miles. Its southern boundary is not so well defined, extending variably inland till it meets the great African Syrtia, and also including the numerous oases of the desert itself. Bordered by the Mediterranean on the north, and by the Sahara on the south, its temperature is generally moderate, and remarkably uniform, seldom descending to the freezing point, and seldom coming up to sultry. From March to Sept. is the dry season, when the ground is frequently so parched as to render walking upon it impracticable. From Sept. to March is the wet season, but the rains are moderate, and almost every day affords a respite of sunshine. The soil is fertile, though sandy and light on the coast, the climate healthy, and agricultural productions are various and abundant. The range of production gives a combination of both tropical and temperate fruits. Agriculture is, nevertheless, greatly neglected. For 8 centuries, the inhabitants of the Barbary states have rendered themselves the pest of human society by their depredations upon the commerce of the seas. Not until recently have the civilized nations of the globe been able to restrain the piratical corsairs whose name is associated with cruelty and disregard of treaty stipulations. A more particular account will be found under the heads of the states themselves. Anciently, all Africa was comprehended under 2 divisions, Egypt and Libya, while Libya was subdivided into northern and southern Libya. North Libya comprised mainly what is now known as the Barbary states. Herodotus says that in his day northern Libya was inhabited by the indigenous race of Libyans, and by the foreign Phœnicians and Greeks. These latter settled at various points, from Egypt to Carthage, while the indigenous Libyans occupied from the east to the west, throughout the entire extent. Of the origin of the Libyans, whom Herodotus calls indigenous, we have no trace. Arabian tradition says they colonized Libya from Yemen. The Phœnicians early settled Carthage (869 B. C.), and perhaps the still more western coasts of Mauritania. At least, it appears that Carthage was a powerful state at the invasion of Greece by Xerxes. The Cyrenians,

who were Greeks, had colonized at Cyrene, just east of the bay of the Mediterranean called Syrtis Major (gulf of Sidra), in what is now known as Barca. West of Carthage lay Numidia and Mauritania, even to the pillars of Hercules; east of Cyrene was Egypt; while between these two foreign colonies stretched the narrow coast line, from the Major to the Minor Syrtis, known as Emporia. The rapidly growing Carthaginian power soon extended colonies along the entire coast from the pillars of Hercules to Grecian Cyrene. The jealousy of Rome was not long in being awakened against so threatening a rival. The history of the Punic wars is well known. At the end of 117 years the Carthaginian power was extinguished, Carthage herself in ruins, and Africa a Roman province, from Mauritania to Cyrenaica. The more complete subjugation of Numidia was accomplished in the Jugurthine war, and that of Mauritania in the reign of Claudius. Thus the territory of the Barbary states, from independent native sovereignties and foreign colonies, had come into the hands of Rome. About A. D. 400, several Teutonic tribes, overrunning Gaul and crossing the Pyrénées, settled in Spain. When in 428, Boniface revolted against Honorius, the Vandals crossed the Fretum Gaditanum into Africa, led by Genseric, drove out the inhabitants, utterly expelled the Roman power from upper Libya, and reigned 100 years. Then came the struggle under Justinian, for the re-establishment of the Roman ascendancy. By Belisarius it was conducted to a successful issue, and northern Africa was united to the eastern empire. For over 800 years, this relation continued until about the middle of the 7th century, the Saracens overran Numidia and Mauritania, to the Atlantic, and notwithstanding the disastrous death of their leader Okba, the sceptre of upper Libya passed again from the hands of Rome into that of Arabia. Fifty years later, the conquests of Musa and Tarik were pushed across the straits, and a Saracenic empire established in Spain. But the revolution which brought the Abbasides to the caliphate of Arabia, and drove the only surviving caliph of the Ommiades into Spain, prepared the way for the independence of the western colonies, and Africa began to throw off the Saracenic yoke (788). A succession of fortunes now attended the states of upper Libya. For 8 centuries they were alternately tributary and independent, passing from hand to hand, like the stakes of a faro bank, till in the 16th century the 2 brothers Barbarossa conquered the whole territory of Numidia and Carthage, and erected the regencies of Algiers and Tunis. A few years later the Turkish sultan, whose supremacy the younger Barbarossa had acknowledged, erected the pashalic of Tripoli over the ancient Cyrenaica, while in the west there was a gradual consolidation of power into the hands of Mohammed ben Hamed, and his son, who finally established the dynasty of Sherifs in the empire of Morocco, while the French erected

between Morocco and the possessions of the Porte, the regency of Algeria. Thus we bring down the history of this territory to its present political divisions, except there yet remains to be mentioned the small territory of Baroa, marked on our present maps as in dispute between Egypt and Tripoli. The religion of the Barbary states is generally Islamism. The European settlers are of course Christians, or Jews, while the blacks, who are slaves, are pagans. There seem to be at present 6 races or tribes of men inhabiting the Barbary states: 1. The Moors. 2. The Arabs. 3. The Berbers, who are indigenous, and from whom the states probably received the appellation Barbary. 4. The Jews. 5. The Turks, who are the military of the country. 6. The Blacks. The Arabs call the Barbary states *Moghreb* (west). The language of the people inland differs from that of Arabia and Syria, though not so much as on the coast.

BARBASTRO, a district and town of Spain. The district is bounded on the north by the Pyrénées mountains, and touches Catalonia on the south-east, comprising the valleys of the Cinca, Pugetonas, and Solana. It is fertile and well cultivated. The town is a walled town, within the district and on the Cinca, with a population of a little over 6,000. It has a cathedral and 3 convents, with various scientific institutions, and some good old pictures.

BARBAULD, ANNA LÆTITIA, an English authoress, chiefly celebrated for what are called children's books, born in Leicestershire, June 20, 1743, died near London, March 9, 1825. The Rev. John Aikin, her father, a Unitarian minister, carefully cultivated her talents in youth. At the age of 15, she removed with him to Warrington, in Lancashire, where he took charge of the celebrated academy, out of which grew the central Unitarian college, afterward transferred to York, and now established in Manchester. Here she became well acquainted with Dr. Priestley and Enfield. In 1773, at the age of 30, she published a volume of her poems, which the same year ran through 4 editions. This was followed by miscellaneous pieces in prose, partly written by her brother. In 1774, she married the Rev. Rochemond Barbauld, with whom she kept a school, for the next 11 years, in the village of Palsgrave, Suffolk. During this period, she published devotional pieces, compiled from the Psalms of David; early lessons for children from 2 to 3 years old; and hymns in prose, for children. The 2 last formed an era in the art of instruction, and the early lessons were translated into French, by M. Pasquier. After a short visit to the continent, in 1785-'6, Mrs. Barbauld went to live at Hampstead, near London, where her husband became pastor of a small congregation. Here she wrote several pamphlets and poems on popular subjects, such as the removal of the civil disabilities of dissenters and the abolition of the slave trade. In 1808, her husband died at Stoke Newington, whither he had removed 6 years before, and where she remained until

her death. Here she edited selections from the "Spectator," and similar standard works, with a preliminary essay, which is her best effort as a literary critic. She wrote the life of Richardson, the novelist, to accompany his correspondence, edited the "British Novelists," with memoirs and criticisms, and published a collection of prose and verse, under the name of the "Female Spectator." Her last separate publication was an able poem called "Eighteen hundred and Eleven," which appeared in 1812. Her works, collected in 2 volumes, were edited, with a memoir, by her niece, Miss Lucy Aikin. Her poetry is generally too didactic, but her prose is easy, graceful, and natural.

BARBAULT ROYER, P. F., a native of St. Domingo, and of African descent, lived in the latter half of the 18th century, and took part with his countrymen in their insurrection in 1792. He acted as the agent of the colony in preferring complaints against the colonial companies, but was unable to procure a hearing from the council of the 500. He was afterward employed in France in the editorial department of several journals, and in the bureau of foreign affairs under the directory. He is the author of various treatises on political questions and public law.

BARBAZAN, ARNAULD GUILHEM, sire de, an illustrious French soldier of the 15th century, died in 1432. He early acquired fame by his prowess; in 1404 he was the hero of a private encounter between 6 French and 6 English knights, which took place near the castle of Montendre, in Saintonge; the former being especially indebted to him for their victory. On this occasion, King Charles VI. rewarded him by the gift of a sword, inscribed with these words: *Ut lapsu graviore ruant*, and the surname of *Chevalier sans reproche*, which was also given to Bayard in the following century. Barbazan signalized himself by many heroic deeds during the wars which then desolated France. Having fallen into the hands of the English, who, for eight years, kept him a prisoner at Chateau Gaillard, he was, in 1430, liberated by his companion in arms Lahire, who stormed the place. He immediately reentered the field with unabated ardor, defeated the English and the Burgundians at the battle of La Croisette, which greatly contributed to the ultimate deliverance of the country, and was bountifully remunerated by King Charles VII., who called him the "Restorer of the kingdom and crown of France." Soon after, being sent by the king to help young René d'Anjou to conquer the duchy of Lorraine, he was wounded at the battle of Bullegueville, which had been fought contrary to his advice, and died in consequence. Extraordinary honors were bestowed upon him, and like Du Guesclin, he was buried in the celebrated monastery of St. Denis.—ETIENNE, a French philologist, born in 1696 at St. Fargeau, near Auxerre, died Oct. 8, 1770, at Paris. He was one of the earlier laborers on the vernacular literature of the middle ages, and is chiefly known

by the collection of *Fabliaux*, or metrical tales, which he published in Paris in 1756.

BARBÉ-MARBOIS, FRANÇOIS DE, count and marquis, a French statesman, born at Metz, Jan. 31, 1745, died Jan. 14, 1837. After fulfilling diplomatic offices at several German courts, he was sent to the new government of the United States of America as consul general of France. He organized all the French consulates in this country, in which he resided 10 years, and married the daughter of William Moore, governor of Pennsylvania. In 1785 he was appointed by Louis XVI. superintendent of St. Domingo, and introduced many reforms into the administration of justice and of finance in that island. He returned to France in 1790, and was again employed in German diplomacy. During the excitement of the revolution he was exiled to Guiana as a friend of royalty, but being recalled in 1801, he was made director of the treasury, a title which he soon exchanged for that of minister. In 1803 he was appointed to cede Louisiana to the United States for 50,000,000 fr., but had the skill to obtain the price of 80,000,000 fr., a piece of diplomacy for which he was liberally rewarded by Napoleon. He was soon after made count of the empire and chief officer of the legion of honor. In 1806 an oversight which had occurred in his accounts as state treasurer caused his disgrace, which was however speedily ended by Napoleon, who recognized and needed his ability. In 1813 he entered the senate, and the next year voted for the forfeiture of the emperor and the reestablishment of the Bourbon dynasty. He was well received by Louis XVIII., appointed a peer of France, and honorary counsellor of the university, and confirmed in the office of first president of the court of accounts, which he had formerly held. He was an object of the indignation of Napoleon after his return to France from Elba, and was ordered to leave Paris. He resumed his offices after the return of the Bourbons, but moderate in his principles, and an enemy of all reaction, he was not in harmony with the majority of those with whom he associated; and in the chamber of peers he succeeded with difficulty in effecting the substitution of banishment for death as a penalty for political offenders. After the revolution of July, he exercised the same adulation and took the same oaths of fidelity to Louis Philippe, which he had formerly given to Napoleon and the Bourbon princes. The desire to die first president, which had been the motive of all his flexibility, proved at last a vain one, and in 1834 he was succeeded in his offices, and as a consolation received the portrait of the king, accompanied by an autograph letter. His numerous works contain curious details concerning St. Domingo, Louisiana, and Guiana, which he studied in his exile.

BARBEAU DE LA BRUYERE, JEAN LOUIS, a French literary man, born at Paris in 1710, died in 1781. Learned and industrious, but poor, he was obliged to work for publishers, either in Holland or in France. He published

in 1759, under the title of *Mappemonde Historique*, an ingenious map, then entirely new, in which geography, chronology, and history were simultaneously presented.

BARBEL (*barbus*, Ouv.), a large, coarse fresh water fish, found in many of the large European rivers. It has several barbe or beard-like feelers, pendant from its leathery mouth, which are said to be the origin of its name. It frequents deep, still pools with eddies, in swift-flowing streams; roots in the gravel bottoms like a hog; and feeds on worms and other bottom bait. It grows to the length of 3 feet, and to the weight of 18 or 20 pounds, is a determined biter, and, when hooked, a desperate puller. On the table it is all but worthless.

BARBER, a person who shaves others and dresses their hair. The custom of cutting off the beard was introduced into Greece, and thence into Rome, from the East. Plutarch says that the reason for shaving was that they might not be pulled by the beard in battle. A few persons who had wealth to keep a stock of razors, combs, mirrors, and perfumes, were shaved in their own houses by slaves, but it was the prevalent custom both in Greece and Rome to make a morning visit to the barber's shop. These shops were the resort of the idle, curious, and witty, who told stories, discussed philosophy, and learned the news. The barber furnished to the old comic and satirical authors the type of curiosity and loquacity. It is related that a philosopher, being once asked by one of these artists how he wished to be shaved, replied, "Without speaking." The duties of the barber were to dress the hair, shave the beard, and cut the finger nails. A small poem of Phanasæ the barber Eugathes has been preserved, which contains a comical enumeration of all the accoutrements necessary to the practice of his art. To barbaric invasion restored for a time the fashion of full beards, but western Europe men began to shave again in the 11th century, and as barbers then became numerous, they extended the limits of their art and invaded the province of surgery. There was a long strife, which it required to ordinarances of kings and the decrees of councils to settle, between the barbers and the surgeons the former being ambitious to rise above their rank, and the latter desirous to exclude from their surgical practices, persons who had not been regularly educated. Their superior talent and learning gained for the surgeons the higher social position, but the barbers retained till near the end of the French revolution the exclusive privilege of using the lancet. The barber to the king has sometimes succeeded in playing an important part in the state by gaining the royal confidence; but the most notable instance of this was Peter of Broese, at first barber and then prime minister to Philip the Bold of France, who afterward hanged for his abuse of power. The barbers of the East have the lively and talkative character of their class in the West. The Mussulmans generally wear their beard, but shave their heads, and this operation requires a very

skilful hand, and modern travellers describe the little and vivacious barber, with his lancet in one hand and his razor in the other, very much as he is represented in the stories of the "Arabian Nights." The Chinese also shave the greater part of the head.

BARBER, FRANCIS, the faithful negro servant and friend of Dr. Samuel Johnson, died Feb. 13, 1801. He was born in Jamaica, probably about 1741, as he was supposed to be 9 years old when brought to England, in 1750, by Col. Bathurst, who sent him for some time to a boarding-school in Yorkshire, kept by a clergyman. The colonel, whose property he then was (it was before the 12 judges of England had declared that slavery could not exist in Great Britain), by will bequeathed him his freedom, and, in 1752, the lad entered into Dr. Johnson's service, in which he continued until Johnson's death, with the exception of two intervals; in one of which, upon some difference with his master, he went and served an apothecary in Cheapside, but still visited Johnson; and in another, he took a fancy to go to sea. This last escapade occurred in 1759, and through Dr. Smollett's interference with John Wilkes, one of the lords of the admiralty procured his discharge (in June, 1760), without any wish on the part of Barber. On returning, he resumed his situation with Dr. Johnson. Eight years later, he was placed at a boarding-school in Herts, at Johnson's expense, and Mrs. Williams (head of Johnson's miscellaneous household), whenever Barber displeased the doctor, would remind him that on his education £300 had been expended. Indeed, he was not treated very well by Mrs. Williams, who was perpetually complaining of his inattention, while he would remonstrate against the authority she assumed, and the severity she exercised. Nothing but strong personal attachment to Johnson could have so long kept him in the house under such treatment. It was owing to Barber's care that the manuscript of Johnson's diary of his tour in Wales in 1774 was preserved. As Dr. Johnson left no surviving relative, he resolved to make a liberal provision for Francis Barber, "whom," says Boswell, "he looked upon as particularly under his protection, and whom he had all along treated truly as an humble friend." When about to make his will, a few days before his death, he asked Dr. Brocklesby what would be a proper annuity to a faithful servant? and was answered that in the case of a nobleman £50 a year was considered an adequate reward for many years' faithful services. "Then," said Johnson, "I shall be *nobilissimus*, for I mean to leave Frank £70 a year, and I desire you to tell him so." The will, executed immediately after, bequeathed all Johnson's property (except £300) in trust for the use of Francis Barber. By a codicil, executed on the following day, he bequeathed his house at Lichfield to certain persons named Johnson, several small remembrances to different friends, and an annuity of £70 a year to Barber, who was also

made residuary legatee. Barber's whole income from this generous bequest amounted to about £140, on which, at Johnson's recommendation, he retired to Lichfield, and passed the rest of his days in comfort. He died in the infirmary at Stafford, after undergoing a painful operation. Almost in his last moments, Dr. Johnson solemnly commended Francis Barber to the notice and care of Mr. Wyndham, placing Barber's hand in that of his new protector. Barber was one of the two persons present when Dr. Johnson breathed his last.

BARBER, FRANCIS, a distinguished officer in the revolutionary army, born at Princeton, N. J., in 1751, died at Newburg, N. Y. April, 1788. He graduated at the college of New Jersey, in 1767, being but 16 years of age, and in 1769 was selected by a committee composed of such eminent men as the Rev. Dr. Thomas Bradbury Chandler, Rev. James Caldwell, Elias Boudinot, and John Chetwood, as rector of the academy at Elizabethtown, N. J. Under his care, the institution attained a national reputation, and among his pupils were many who afterward rose to high stations both in church and state. Among them was Alexander Hamilton, who was placed there by Gov. Livingston, himself an accomplished scholar and a keen observer, and whose selection of Mr. Barber as teacher for his protégé is good evidence of his eminent fitness for the task of instructing youth. He continued at the head of the academy until the commencement of the war, when the pupils were scattered, and the rector, with his two younger brothers, took up arms in their country's service. In Feb. 1776, he received from congress a commission as major of the 3d battalion of the New Jersey troops, and in November of the same year he was appointed, by the legislature, lieutenant-colonel of the 3d Jersey regiment. The appointment was confirmed by congress, and he was commissioned on Jan. 1, 1777, and when Baron Steuben was made inspector-general of the army, Col. Barber was designated as assistant inspector-general, in which capacity he rendered efficient service, and enjoyed the entire confidence of the veteran chief of that important department. He served with his regiment, under Gen. Schuyler, in the northern army, and marched from Ticonderoga to join Gen. Washington, before the battle of Trenton, in which he participated, as, also, in that of Princeton, which immediately followed it, and in the important battles of Brandywine, Germantown, and Monmouth. In the latter action he was severely wounded, and was compelled to retire to his home at Elizabethtown, where, though disabled from service in the field, he was constantly engaged in obtaining intelligence of the enemy's movements, and other matters of importance to the patriot cause. Some of Gen. Washington's letters acknowledging the receipt of his communications, and expressing his sense of the value of Col. Barber's services, are yet extant, and there is abundant evidence to prove that full confidence

was placed in his fidelity and sound judgment. In 1779, he served as adjutant-general in Gen. Sullivan's campaign against the Indians, and was wounded in the battle at Newtown. In 1780, the delicate duty of enforcing the requisition for grain and cattle in the county of Gloucester, N. J., was assigned him by Washington, and the judicious manner in which it was performed was acknowledged in a letter which is still preserved. He was engaged in the battle of Springfield, where the Jersey brigade was honorably conspicuous, and in 1781, when the mutiny of the Pennsylvanians and New Jersey troops threatened the very existence of the army, he was selected by Washington as an officer who, by his personal popularity, discretion, and firmness, was peculiarly fitted for the emergency. He was successful in the discharge of the important and delicate duty of suppressing the revolt, and in the same year he accompanied the Jersey line in their march to Virginia, where they formed part of the force which invested Yorktown. On the day in which Washington intended to communicate the news of peace to the army, he invited several of the officers, among whom was Col. Barber, to dine with him. He was at that time acting as officer of the day, and received an intimation that the commander-in-chief intended to announce the joyful news at the table, before it should be published in general orders. Hastening to finish his official duties, he was riding near the edge of a wood where some soldiers were cutting down a tree, when it fell, instantly killing both himself and his horse.

BARBERINI, the name of a celebrated Roman family in the 17th century, originally of Tuscany. Maffeo Barberini was elected pope in 1623, under the name of Urban VIII., and through his influence the different members of his family acquired fortune, position, and power. Taddeo Barberini, prince of Palestrina and general of the papal troops, a beligerent personage, who died at Paris in 1667, was the cause of continued hostilities with the small neighboring states from 1641 to 1644, when his lease of power expired with the death of the pope, which took place in the latter year. With the advent of the new pope, Innocent X., to the holy see, the influence of the Barberini family, who sought refuge in France, was brought to an end. At the instance of Cardinal Mazarin they subsequently recovered their property, which had been confiscated by the papal authorities. The principality of Palestrina also remained in the family, the only representative of which, in the middle of the 18th century, was Taddeo's granddaughter, Cornelia Constantia Barberini, married in 1728 to Giulio Cesare Colonna, prince of Carignano and duke of Bassanello, whose daughter, Olympia, the future Neapolitan duchess di Girifalco, who died in 1800, became celebrated by her tragical and romantic life. The Barberini and Colonna estates passed subsequently into the hands of one of their sons, Carlo III., who died in 1819, and

his son, Francesco IV., is the present representative of the Barberini family. He possesses a charming villa in the vicinity of Albano, and a superb palace in Rome, the greatest after the Vatican, which is situated N. W. of the Quirinal, in the rear of the Piazza Barberini. It was built by Taddeo in the time of Urban VIII., by eminent architects, like Carlo Maderno, Borromini, and Bernini. It was asserted that stones of the Vatican and of other remarkable monuments of antiquity had been abstracted for the purpose of constructing this palace, which led to the saying of Pasquin: *Quod non fecerunt Barbari fecerunt Barberini*. For many years Thorwaldsen's studio was in the basement of the Vatican, which contains some of the most celebrated Italian works of art, as the famous picture of Pietro da Cortona in the principal hall, and in the gallery Raphael's Fornarina, Guido Reni's S. Andrea Corsini, and *Roma Dei*, an old picture discovered April 7, 1655. Other works of art, which belonged to the Barberini family, have passed into the collections of European galleries, as the "Sleeping Faun," in the Munich Glyptothek, and the celebrated "Portland Vase" in the British museum.

BARBERRY, the botanical name of which is *berberis*, from *berbêrya*, the Arabic name of the fruit, a genus of plants belonging to the natural order *berberidaceae*, and whose characteristics are 6 roundish sepals, with bristles outside, 6 obovate petals, with 2 glandular spots inside, 6 stamens, alternate, ovate, serrated, and pointed leaves, a shrubby habit, with yellow wood and inner bark, yellow flowers in drooping racemes, and sour berries and leaves. The stamens have a remarkable irritability, so that when the filament is touched on the inside with the point of a needle, they throw themselves quickly forward upon the stigma; the petals also follow them in this movement. This phenomenon is best observed in mild and dry weather, and can rarely be seen after the stamens have been dashed against each other by a violent wind or rain. The genus comprises 22 species, which are found in various regions from China to Mexico; several of them are evergreens, and most of them are ornamental as well as useful. The *vulgaris*, or common barberry, has thorns upon the branches of vate-oblong, bristly toothed leaves in rosettes or fascicles, drooping many-flowered racemes and scarlet oblong berries. It is a native of the northern parts of Europe and Asia, but has become naturalized and thoroughly wild in the thickets and waste grounds of E. New England. In the north of Europe it prefers the valleys, but in the south it becomes a mountaineer, and is one of the most hardy of the Alpine shrubs. In Italy it attains a height of from 4 to 6 feet and lives for centuries. Nearly all the parts of this plant serve a useful purpose. The inner bark and the root, with the aid of alum, furnish an excellent yellow dye for coloring linen and leather. Its leaves are cropped by cows and sheep. It is probably by reason of its yellow

color that it has been esteemed good for the jaundice, the same having been fancied also of the dock and carrot; but the bitterness and astringency of the bark have made it valued as a medicine. The berries are so acid that birds refuse to eat them, but when prepared with sugar, they make delicious and healthful preserves, sirups, and comfits. It has been a very general opinion that barberry bushes cause blight to wheat sown in their vicinity, but if this be true it has not been accounted for. The *Canadensis*, or American barberry, is a shrub from 1 to 8 feet high, with leaves less sharply pointed, and racemes with fewer flowers than the preceding, and is found on the Alleghanies of Virginia and southward. The *aquifolium*, a native of western North America, has shining evergreen pinnated leaves, and deep-violet or red berries, and is often cultivated for its beauty. There are several other Asiatic and American species which are among the most hardy ornaments of gardens.

BARBÈS, ARMAND, a French republican, especially known by his participation in several conspiracies, and the sentence of imprisonment and even of death pronounced upon him, was born in 1810 at Pointe-à-Pitre, Guadeloupe, and came to France, when a child, with his family, who possessed an estate in the vicinity of Carcassonne. On the death of his father, he inherited a handsome fortune, and was sent to Paris by his guardian to study law; but instead he launched at once into politics, or rather into conspiracies; for conspiracies were then in France the essence of politics. On the insurrection of April, 1834, he was arrested as a member of the *Société des droits de l'homme*; but the charges against him not being substantiated by evidence, he was released without a trial, after 5 months imprisonment, during which he had secured many warm friends and admirers among the poor people confined in the same prison. This was the beginning of his popularity. In 1835, being suspected of having had some previous knowledge of the attempted assassination of Louis Philippe by Fieschi, he was again arrested, but discharged for want of evidence. The government, however, was bent on his condemnation; and a few months later he was sentenced to a year's imprisonment for secretly manufacturing gunpowder. When restored to liberty, he entered actively upon a new plot with Auguste Blanqui, Martin Bernard, and some other chiefs of *La société des familles*, and all their measures seemed so well concerted that they relied upon success. On May 12, 1839, 100 armed men, headed by Barbès, boldly sallied out at Paris, shouting *Vive la république!* and marched toward the *Palais de justice*. They soon reached the military post attached to the *Conciergerie*. The soldiers, under Lieut. Drouineau, offered resistance, when their commander was killed by the discharge of a pistol, and the post taken. But alarm had been given at the prefecture of police; troops were promptly summoned; and

the insurgents, being unsupported by the people, tried in vain to construct barricades. Notwithstanding their courage, they were easily overpowered by superior forces; Barbès, who had been slightly wounded, was taken prisoner with some of his companions. A few weeks later, the high court, consisting of the chamber of peers, sentenced him to death. During his trial, as well as on hearing the sentence, he displayed unabated firmness; his youth and his courage excited sympathy in his favor; and Louis Philippe, yielding to the entreaties of his own son, the duke of Orleans, commuted the punishment to perpetual imprisonment. At the end of 9 years, the revolution of Feb., 1848, released the prisoner, who was at once elected colonel of the 12th legion of national guards at Paris, and representative to the constituent assembly by the department of Aude. Being dissatisfied with the very moderate course pursued by that body, he took part in the insurrection of May 15, headed by Huber, Raspail, and Blanqui. He went with them to the *hotel de ville*, where he was arrested during the evening, and taken to the dungeon of Vincennes. The high court at Bourges sentenced him to transportation; but as there was yet no penal colony, he was sent to Mont St. Michel, where he was confined for some years. During the Crimean war, a letter of his, praising the heroic deeds of the French army, found its way into the newspapers, and the imperial government, seizing on the opportunity, amnestied the prisoner, who declined such a favor from a detested power; but, being thrown out of prison, he repaired to Paris, wrote a letter in which he freely expressed his sentiments, declaring that he would stay 2 days in Paris, in order to await the decision of the imperial police; but the government being disinclined to rearrest him, he left France, and is probably now living in Spain. Barbès, it may be said, is a conspirator by nature; all his life has been but a perpetual conspiracy; nevertheless, it must be confessed that generosity and a chivalrous bearing have always marked his conduct.

BARBETTE. In a battery, guns are said to be placed *en barbette* when they stand high enough to fire over the crest of the parapet instead of, as usual, through embrasures. To raise the guns to this height, various means are adopted. In field fortifications, an earthwork platform behind the parapet forms the station for the gun. In a permanent fortification, the common high sliding carriage or the traversing platform raises the gun to the required level. Guns placed *en barbette* have not the same cover from the enemy's fire as those firing through embrasures; they are, therefore, disposed in this manner where the parapet cannot afford to be weakened by the cutting off embrasures, or where it is desirable to extend their range more to the right and left than would be possible with embrasures. On this account, guns are placed *en barbette* in field fortifications; in the salient angles of works; and in strand bat-

teries destined to act against ships, especially if the parapet is of masonry. To protect them from enflaming fire, traverses and bonnets are constructed when necessary.

BARBEYRAC, CHARLES, a French physician, born at Céreste, in Provence, in 1629, died at Montpellier in 1699. John Locke, who had known Sydenham and Barbeyrac in the latter city, used to say that he never knew two men more alike both in bearing and ideas.—JEAN, a French jurist, born at Bézura, March 15, 1674, died at Groningen, March 8, 1744. Belonging to a family of Calvinists, he went to Switzerland on the revocation of the edict of Nantes. Afterward he went to Germany, became professor of belles-lettres in the French college at Berlin, then returned to Lausanne, where he taught history and civil law; and lastly was called to Groningen, and appointed director of the academy. He published a number of treatises upon civil and international law which are still referred to.

BARBIÉ DU BOUQUE, JEAN DENIS, a French geographer, born at Paris in 1760, died there Dec. 28, 1825. He was the worthy disciple of the celebrated D'Anville, his whole life being devoted to geography, and especially to ancient geography. On the return of Oboiseul-Gouffier, from Greece, he was intrusted with the duty of classifying the documents brought by him, and attended, from 1782 to 1824, to the publication of the *Voyage pittoresque de la Grèce*, which he illustrated with many valuable maps. Meanwhile he drew up the maps attached to Barthélemy's travels of Anacharsis, published in 1788. In 1807, he completed an excellent map of the Morea, which was subsequently used during the expedition of the French in that peninsula. In the same year he wrote a curious paper, *Notice sur un manuscrit de la bibliothèque du prince de Talleyrand*, wherein he attempted to demonstrate that the eastern coast of Australia had been visited by the Portuguese as early as 1525. He was about elucidating some difficult points of the geography of Africa when he was carried away by apoplexy.

BARBIER, I. ANTOINE ALEXANDRE, a French bibliographer, born at Coulommiers in 1765, died at Paris, Dec. 5, 1825. He entered sacred orders when quite young, took the oath to the civil constitution of the clergy adopted by the constituent assembly, but afterward renounced the priesthood and married. He was then commissioned to collect the books and works of art belonging to the abolished convents in order to place them in the newly created public establishments, and successfully performed his task. Having been librarian to the directory, he was, with his library, transferred to the council of state. This gave him frequent opportunities of seeing Napoleon, who, in 1807, made him his private librarian. In this last capacity, it was his duty to make reports on the most important works that were published, and sometimes on religious controversies. The Louvre library, and those of the castles of Com-

piègne and Fontainebleau, were made up by him, and are remarkable for their skilful arrangement. On the return of the Bourbons, he was appointed superintendent of the private royal libraries, which post he kept until 1823, when he was suddenly discharged. He died 3 years later partly of grief. No man has done better service to French bibliography. His *Nouvelle bibliothèque d'un homme de goût*, gives excellent directions for collecting a good library; while his *Dictionnaire des ouvrages anonymes et pseudonymes*, is one of the most interesting works of the kind, full of research, able criticism, and curious learning. II. CHARLES, a French philanthropist, born in the latter part of the last century. Of his early history nothing is known, but in 1820 we find him appearing before the French academy of sciences and arts, with a plan for teaching the blind to write in characters legible to themselves by means of salient points. He had already spent several years on this plan, which was phonetic in its character, having each sound designated by a particular arrangement of punctured dots. He subsequently modified his system repeatedly, and devoted his life and fortune to perfecting it. It possessed, however, several faults which prevented its general adoption; it was imperfect as a phonetic system, omitting several important sounds, and introducing some doubtful ones. It also occupied too much space and time, one letter sometimes requiring 12 dots. It is not now used, but is of interest as having been the basis of Braille's system of writing with points, now so extensively adopted in blind institutions. M. Barbier died about 1880. III. EDMOND JEAN FRANÇOIS, born at Paris in 1689, died there Jan. 29, 1771. He was a lawyer of celebrity and a man of the world; but his claims to attention are founded on his *Journal historique et anecdotique du règne de Louis XV.*, published in Paris in 1844. This journal, embracing a period of 44 years from 1718 to 1762, forms the connection between the masterly book of St. Simon and the amusing *Mémoires* of Bachaumont. It narrates many facts not to be found in the newspapers of that time. IV. HENRI AUGUSTE, a French satirico-lyric poet, born in Paris, April 29, 1804, received a classical education, studied in the law school and became a licentiate in 1828. He had shown no indications of talent for poetry, when suddenly, on the revolution of July, as if struck by an electric shock, his poetical vein burst out, and a first satire, *La Course*, published in the month of August in the *Revue de Paris*, dazzled every one with its bold originality and energetic brilliancy. It was a virulent combination of that shameful contest for the spirit which never fails to follow a revolution; the crude roughness of the language was a novelty in the literary world, while the iambic rhythm, but recently adopted, added piquancy to the sarcasm. Barbier was at once proclaimed a great poet by both the public and the most untidious critics. Several other poems of the same kind appeared in quick succession, *Le Populaire*

and *L'Idole* among the number. They were collected under the title of *Iambes*, in a volume which was eagerly sought for. Meanwhile political passions subsided, and our poet had to look for new themes; and in his poem called *Il Pianto*, he bitterly lamented the destiny and degeneration of Italy; but this performance, although still admired, did not command the applause which had been lavished on the previous volume. *Lazare*, the subject of which is the miseries and sufferings of the popular classes in England, was yet more coldly received. He also tried to touch the old strings in his *Satires nouvelles* or *Satires dramatiques*, *Pot-de-Vin*, *Erostrate*, *Les rimes héroïques*, but could not stir the public indifference. Still, in 1848, he published a skilful version of Shakespeare's Julius Cæsar, and in 1851, the *Chansons* and *Odelettes*, short love poems, but all in vain; his popularity could not be revived.

BARBIERI, GIOVANNI FRANCESCO, called GUERCINO, a distinguished Italian painter, born at Cento, in Ferrara, in 1590, died at Bologna, in 1666. An accident deprived him in infancy of the use of his right eye, whence he gained his name, Guercino, by which he is commonly known. While a boy he discovered a remarkable talent for painting, and according to common report, became a disciple of the Caracci at Bologna, although, as his style does not resemble that of the Bologna school, it is probable that he never frequented it. Oremolini and Benedetti Gennari, 2 artists of little note, seem to have been his only masters, from whom he acquired chiefly the rudiments of the art, all his additional knowledge and perfection in it being the result of his own study. Writers have distinguished 8 different styles in Guercino's paintings, of the 1st of which few specimens are to be found, being the least known, while the 2d and 3d embrace the great bulk of his works. His earlier pictures show the influence of Caravaggio in their strongly contrasted lights and shades, and in the boldness and somewhat of the coarseness of that master; but by frequent visits to Rome, Bologna, and Venice, and intercourse with the most prominent artists of the schools of those cities, he gradually formed what is known as his 2d style, in which most of his pictures of any value are painted. Its characteristics are boldness and strength, mingled with much sweetness and harmony, and a wonderful art of relief, in which he recalled some of the celebrated illusions of the old masters. In this style are painted his "St. Petronilla," formerly in St. Peter's; the "Aurora," at the Villa Ludovisi; "St. Philip of Neri," at Rome; the "Resurrection," at Cento; "St. Elena," at Venice, and above all his magnificent frescoes on the dome of the cathedral at Piacenza, which for color, bold fore-shortening, and almost magical relief, are unsurpassed by works of their class. With all his efforts at correctness of design and dignity of form and features, his works are frequently deficient in ideal beauty, and would appear coarse were they not redeemed by

their admirable coloring and skilful management of lights and shadows. His 3d style, a palpable imitation of Guido, whose fame was then at its height, is feeble and languid, and in striving to produce the sweetness, grace, and delicacy of color of this master, he lost his own characteristic vigor. Guercino was an exceedingly industrious painter, and among his works are enumerated 106 altar pieces, 144 large compositions, and an immense number of Madonnas, portraits, landscapes, &c., executed with great rapidity. He also left numerous excellent drawings. He had many disciples and imitators, and founded a school, which flourished for a number of years at Cento.

BARBITON, a stringed instrument of the Greeks, called by Theocritus *πολυχορδος*, or many stringed. The derivation of the word is unknown. Its invention is variously ascribed to Terpander and Anacreon. In the time of Dionysius, it was disused by the Greeks, but retained by the Romans, who had it from them, in certain ancient sacrificial rites. Nothing is positively known, whether as to its form or the number of its strings; nor is there any recognized representation of it, as there is of the various kinds of lyres in ancient sculptures.

BARBOU, a family whose name is identified with printing, and whose descendants regularly succeeded each other in that occupation. Dating from JEAN BARBOU, who printed at Lyons in 1589, they were prominent printers in the principal cities of Europe, until 1808.—HUGUES, the son of JEAN, established himself at Limoges, where he printed, in 1580, a beautiful edition of Cicero's epistles to Atticus.—In 1699, the widow of CLAUDE, who carried on her husband's business at Paris, purchased of Fénélon's valet-de-chambre, who had stolen it from his master, the MS. of Telemachus, and printed it as far as the 208th page, when all the copies printed were seized by the government for political reasons and destroyed, the MS., however, being preserved, was afterward sold to a bookseller at the Hague.—JEAN JOSEPH, lived in Paris in 1704, and was at the same time a printer and bookseller.—He was succeeded in 1746, by JOSEPH GERARD. In 1748, the abbé Lenglet Dufresnoy commenced the publication of a new and elegant edition of the classics to fill the place of that of the Elzevirs, then becoming rare. This project was continued by Joseph Gérard Barbon, who was succeeded by his nephew Hugh; and 77 volumes of the classics were printed in this form. The business remained in the hands of this family until 1808, having existed nearly 8 centuries.

BARBOU-DESCOURIERES, GABRIEL, a French general, born in 1761, died at Paris, Feb. 8, 1816, took an active part in the expedition to St. Domingo. Afterward, in the battle of Fleurus, he distinguished himself by his prominent part in the capture of Valenciennes. At the battle of Alkmaer, he secured the victory to the French army, by ousting the Russians from the village of Bergen, Oct. 1, 1798. He was

raised, Oct. 17, 1798, to the rank of general of division, and a short time afterward, succeeded Marshal Bernadotte in the command of the Hanoverian army. In 1807, he fought in Spain, was made prisoner at Baylen, recovered his liberty in 1808, and charged with the defence of Venice, he compelled the Austrian archduke John to raise the siege of Fort Malghera. From 1810 to 1814 he was governor of Ancona, and in 1815 he gave in his adhesion to the Bourbons.

BARBOUR. I. A county in the N. W. part of Virginia, contains an area of 880 square miles. Its surface is hilly, and its soil very fertile, and well adapted for grazing. It is drained by the streams that go to make up the east fork of the Monongahela river. Live stock, wool, Indian corn and wheat, are the principal products, and maple sugar is made to some extent. Bituminous coal and iron ore are found here, and salt mines have been opened. In 1850, its real estate was valued at \$1,198,712, in 1855, at \$1,390,538, showing an increase of 17 per cent. The productions in 1850 were 209,678 bushels of Indian corn, 38,110 of wheat, 9,916 tons of hay, and 147,649 pounds of butter. There were 19 churches and 546 pupils attending public schools. It was set off from Randolph, Lewis, and Harrison counties in 1843, and named from a distinguished family in the state. Capital, Philippi. Pop. in 1850, whites 8,670, free colored 222, slaves 113, total 9,005.

II. A south-eastern county of Alabama, bounded on the east by the Chattahoochee river, and comprising an area of 825 square miles. It has an undulating surface, partly covered with forests of pine. The soil in the valleys of the streams is fertile, and suitable for Indian corn and cotton. There are extensive sugar plantations, and in 1850, the quantity of sugar made in this county was the greatest produced in any county of the state. The productions that year were 21,573 bales of cotton, 742,182 bushels of Indian corn, 81,164 bushels of oats, and 5,290 hogsheads of sugar. There were 35 churches, 8 newspaper offices, and 435 pupils attending public schools. Capital, Clayton. Pop. in 1850, 28,682, of whom 10,780 were slaves.

BARBOUR. I. **JAMES**, an American senator, and governor of Virginia, distinguished for the purity of his private, and the elevation of his public character, born in Orange co., Va., June 10, 1775, died June 8, 1842. His family was not in prosperous pecuniary circumstances, so that young Barbour had to serve as a deputy sheriff while obtaining a limited education. At the age of 19 he was licensed to practice law, but did not long adhere to the profession, having, as soon as he became eligible by attaining his majority, been chosen to represent his county in the legislature of the state. He served in this capacity until 1812, participating in every debate of importance. When the resolutions of Mr. Madison, of 1798, were under discussion, he vindicated them ably, and their

adoption was one of the chief causes which led to the defeat of the party in power, and the election of Mr. Jefferson, as president, in 1801. The doctrine of "rotation in office" was then first established, and an attempt having been made to remove the state auditor, a faithful officer, on political grounds alone, Mr. Barbour advanced to his defence, and protected him, obtaining from the democracy the avowal that they contended "for principle not for plunder." Mr. Barbour was the proposer of the anti-duelling law of Virginia, one of the most stringent and effective legislative acts ever passed, and which made a previously common violation of the laws a matter of rare occurrence. The bill appropriating fines and penalties to the fund for the encouragement of learning also emanated from him, a law which enabled Mr. Jefferson to found the university of Virginia. In Jan. 1812, Mr. Barbour was elected governor of Virginia, to replace George W. Smith, who had perished in the conflagration of the Richmond theatre, in December of the previous year. During his term of service the invasion of Virginia by the British called forth a conspicuous display of energy and patriotism from Gov. Barbour. Among other incidents of the period which attest his public spirit a single one may be mentioned. A large sum of money was wanted to procure various necessities for the American troops. It could not be raised upon public securities, when Gov. Barbour promptly pledged his private fortune for its repayment, and upon his personal credit it was advanced. Having been reelected governor he was removed by the legislature of his state, on the expiration of his second term, to the U. S. senate, which body he entered in 1815, at the crisis when the fiscal troubles growing out of the war with England were at their height. He was selected by Mr. Madison to present the bill organizing the U. S. bank, which was passed by the senate and would have passed the house but for the news of the conclusion of peace which arrived before congress adjourned. Mr. Barbour differed from most politicians in his state, in believing the bank of the U. S. both expedient and constitutional. He played a prominent part in the discussion of the Missouri question, was chairman of the committee on foreign relations, and was ultimately chosen president of the senate pro tem. In 1825, having served 10 years in the senate, he was appointed secretary of war under the administration of John Quincy Adams, which office he held until 1828, when he was sent to England as minister of the United States at the court of St. James. He returned to his native county, Orange, in Virginia, the next year, having been recalled by Gen. Jackson, of whose administration and that of Mr. Van Buren he continued to be a vigorous opponent. In the year 1839 he presided at the Harrisburg convention, which nominated Gen. Harrison for president, and was active in addressing the people in his favor in various parts of Virginia. His health had already

begun to fail, and in about 3 years from that time, he died in his 67th year, much regretted by his large circle of friends, and the people of the state. II. JOHN S., another distinguished member of the same family, was the son of Mordecai Barbour, an officer of the revolution, and born in the county of Culpepper, Aug. 8, 1790. He was a pupil of the once famous Ogilvie, a celebrated Scotch teacher, among whose scholars may be numbered many of the most distinguished men in Virginia, and other southern states. He was a student of the college of William and Mary, during the session of 1808-'9. For the next 2 years he resided with his relative, Gov. Barbour, and studied law under his direction. During the war of 1812 he enlisted as a private soldier, but was soon made aide-de-camp to Gen. Madison. He was about this time elected to the state legislature, in which body he continued a member, with some intermission, until 1823, serving during a large part of the time as chairman of the important committee on courts of justice, and discharging its duties with such fidelity as to obtain the extraordinary compliment of a vote of thanks. In 1828 he was elected to the U. S. house of representatives, where he remained until 1833, when he voluntarily retired. He was a member of the state convention of 1829, and distinguished himself by his able and eloquent defence of the old system of freehold suffrage. Mr. Barbour's political opinions accorded generally with those of the states' rights school of politicians. One of his best speeches, however, in congress, was delivered in defence of McDuffie's proposition to break up the system of voting for president by states, and establish a uniform system of voting by districts, giving a vote to each district. During this period of his public career, although associated with a crowd of distinguished speakers, Mr. Barbour enjoyed the reputation of an able and eloquent debater. After his retirement from congress he but seldom took an active part in political controversy. His last public appearance was in the democratic convention which nominated Gen. Pierce for the presidency. He died at his family residence in Culpepper, in 1855, beloved and lamented by a large circle of friends. III. PHILIP N., a nephew of James and of Philip Pendleton Barbour, born in the vicinity of Bardstown, Ky. in the year 1817, killed in the storming of Monterey, Sept. 22, 1846. In 1834 he graduated at West Point, and was soon after made a 2d lieutenant in the 3d infantry. Soon after he was made a 1st lieutenant, and became regimental adjutant, a post he maintained until 1845. For his bravery in the defence of Fort Wagoner in East Florida, he was made a brevet-captain, and for his services at Palo Alto and Resaca de la Palma he was made a major by brevet from the date of the battles, May 9th, 1846. He was subsequently killed in action while leading his company at the storming of the breastworks of the city of Monterey. Major Barbour was a man of much talent and of great amenity of manners. He was reputed one of the most

energetic officers of the war with Mexico. IV. PHILIP PENDLETON, an American jurist, younger brother of James, usually known as Governor Barbour, from whom he is distinguished in common parlance as "judge," was born in Orange co., Va., May 25, 1788, died Feb. 24, 1841. He was educated at a school in his native county, till his 16th year, and then, as he expresses it himself, "read some law" at home. In Oct. 1800, he was sent by his father to Kentucky, to attend to business connected with land-claims acquired before that state was separated from Virginia. Meeting with delay and difficulties, he was cast off by his father, and sought in vain to obtain the position of teacher in the Bardstown academy. Subsequently, he was admitted by the courts as a lawyer, in which profession his success was so remarkable that he was rapidly rising to an eminent position. In 1801, however, he returned to Virginia, and, having borrowed the necessary funds, entered the college of William and Mary as a law student. Here he was the friend and associate of Chapman Johnson, Benjamin Watkins Leigh, and Robert Standard, who, in after life, were the pride and glory of the Virginia bar. In 1802 he returned to Orange county and resumed the practice of the law, and soon became one of the most prominent criminal advocates in the commonwealth. His practice in the court of appeals of Virginia and in the supreme court of the United States was large and remunerative. In 1812 Mr. Barbour was elected to represent his county in the lower branch of the Virginia legislature, and served for 2 sessions in that body, being one of the acknowledged leaders of the party which sustained Mr. Madison in the war with England. In 1814 he was sent to congress, and served both as chairman of the naval and judiciary committees, and was subsequently chosen speaker of the house. He was an opponent of the power of congress to undertake public improvements, and of the tariff, sustained the southern side of the Missouri question, and ably maintained those views as to the citizenship of free negroes which have since received the sanction of a majority of the judges of the supreme court in the Dred Scott case. When the university of Virginia went into operation, about the year 1825, he was offered the professorship of law, and pressed by Mr. Jefferson to accept it. He declined the position, however, and was appointed a judge of the general court of Virginia. In 1827 he resigned his seat on the bench, and was reelected to congress. In 1829, on the resignation of Mr. Monroe, he was called on to preside over the state convention, which made a new constitution for Virginia, serving with Mr. Monroe, Mr. Madison, and Chief Justice Marshall. While making a speech in congress on the Marysville road bill he was seized with a hemorrhage which nearly cost him his life. Thus forced from public assemblies, he accepted the post of judge of the circuit court of the United

States, for the eastern district of Virginia, to which he was appointed by Gen. Jackson. In 1831 he was elected president of the free-trade convention in Philadelphia, and on March 15, 1836, he was transferred to the supreme court of the United States, a post he held until his death, which took place suddenly at Washington, D. C. Judge Barbour was distinguished for the solidity and force of his understanding, his powers of analysis and argument, and the excellence of his character in private life. It was said of him by his illustrious friend and associate, Judge Story, that "he was not only equal to all the functions of his high station, but above them, *par negotiis et supra.*" V. THOMAS, a colonel of the army of the revolution, born in 1735, died May 16, 1825, at his plantation near Barboursville in Virginia, at the advanced age of 90. He was before the revolution a devoted whig, and was a member of the house of burgesses of the colony of Virginia, which was the first to remonstrate against the stamp act, and which was dissolved by the governor. At the time of his death he had been for 60 years a magistrate of his county, of which he had also been high sheriff. He was a man of high ability and was the father of Gov. James Barbour, and of Judge Philip Pendleton Barbour of the supreme court of the United States. He was the eldest of a distinguished family of statesmen and politicians who have exerted much influence on public affairs in Virginia.

BARBOUR, JOHN, a Scottish poet and historian, born at Aberdeen about 1816, died 1896. He entered into holy orders and was made archdeacon of Aberdeen by David II., in 1856. His sovereign applied to King Edward III. of England to allow Barbour to go and complete his education at Oxford university. The safe-conduct granting this permit to himself and 3 compatriots, is preserved in Rymer's *Federa*. The work which has made his name famous is his poetical history of the life and deeds of Robert Bruce. This poem, called "The Bruce," was completed in 1375. He is known to have written another metrical romance, called "The Brute," on Brut the Trojan, Geoffrey of Monmouth's hero; but this poem has not come down to us. Barbour enjoyed 2 pensions, one of £10 Scots, charged on the customs of Aberdeen for life, and another of 20s., in perpetuity, from the borough rents, recorded as a reward for the compilation of "The Bruce." At his death he assigned it to the chapter of the cathedral church of Aberdeen, to sing a mass for his soul. In a philological as well as poetical point of view, "The Bruce" is a highly interesting poem. The language of the North-Briton, Barbour, is more intelligible to a modern English reader than the language of that well of English undefiled, Chaucer, or the moral Gower, both contemporary with Barbour, and writing English as it was written in London and Oxford. Chiefly from Barbour's poem we learn the fact that the Scottish branch of the English tongue

was more like its southern brother, the English proper, in the 14th century, than it was ever afterward. This is accounted for by the consideration that the hostility between England and Scotland, brought about by the Plantagenet invasions, had not yet had time to separate the kindred people of the two countries as they were separated in 2 succeeding centuries. A short apostrophe to freedom is the most frequently quoted portion of Barbour's poem, and as it gives a good idea of the Teutonic Scottish dialect of the English tongue in his time, we append it in full:

A! Fredome is a nobill thing
Fredome mayse man to half liking
Fredome all solace to man giffs
He levys at ooe that freely levys
A noble heart may half nane ooe
Na eilys naicht naught else that may him please
Gyff fredome faillythe: far fre liking
Is yearnyt our all othir thing.
Na he, that ay hase levyt fre
May nocht know well the propyrtie,
The anger, na the wreechyt dome
That is cowplyt to soule thyrdom.
But gyff he had assayit it
Then all perquer he suld it wif
And suld think fredome mar to pryse
Then all the gold in warld that is.

The first known printed edition of this poem is dated 1616, and published at Edinburgh, but an earlier one is believed to have existed.

BARBUDA, one of the West India islands belonging to Great Britain. It has a fertile soil, and produces tobacco, cotton, corn, and pepper. There are forts on the west side of the island, and a roadstead, but no port.

BARBULA, L. *Æmilius*, a Roman consul in the year 281 B. C. He was the leader of the Romans in a war with the Tarentines, and had obtained several advantages over the latter, when they invoked the aid of Pyrrhus, king of Epirus. His arrival in Italy in the year 280 caused great alarm at Rome, and put another face upon the war. Barbula was at one time driven to a dangerous position, from which he extricated his army only by placing it behind the Tarentine prisoners that he had taken, and thus preventing his enemies from hurling their lances. Barbula also led the Romans in wars with the Samnites and Sallentine.

BAROA. I. A desert region on the northern coast of Africa, adjoining Egypt. It comprised the ancient Cyrenaica. Barca is a province of the Turkish empire, and is ruled by a governor who resides in its chief town, which is also called Barca. II. An ancient city of Cyrenaica, in Africa, founded, according to St. Jerome, by a Libyan tribe, but, according to Herodotus, by the brothers of Arcesilaeus, king of Cyrene. The murder of one of the monarch's successors within its walls brought down terrible calamities on Barca. The city was besieged and taken by the Persians, many of its inhabitants were put to the sword, and its noblest citizens were sent captives to Darius, who doomed them to a life of perpetual exile in the remote province of Bactria. Barca, however, recovered from this blow, and flourished afterward until the age of the Ptolemies.

But when Cyrenaica became a dependency of the crown of Egypt, a new city called Ptolemais was built by one of that dynasty at the port of Barca, which, from that moment, gradually declined and went to ruin.

BARÇA, or BARÇA, a noble family of Carthage, which produced, for many years in succession, a series of the greatest men which that state, and indeed almost any state, ever produced. No other name of great men decorates the annals of Carthage, and it seems that almost all her greatness was due to that one wonderful family. Niebuhr has well remarked that the greatness of Hannibal so far overtops the greatness of Carthage, that in reading the history of the Punic wars, the city is nothing, the one man every thing; while the greatness of Rome so immeasurably exceeds the greatness of any, or of all, of the greatest of her citizens, that in reading her history, it is the fortunes of the republic which fill the attention, while the deeds of her citizens are weighed only as they show them worthy or unworthy Romans. Had he substituted the word "Barcas" for that one "Hannibal," the saying would have been more just, if less pointed. The principal members of this family were Mago, Hamilcar, and Hasdrubal the elder, the conqueror of Sardinia; Hannibal, Hasdrubal, and Mago, the sons of Hamilcar; Hasdrubal, son of Hasdrubal the elder, conqueror of Sardinia, who himself conquered the Numidians; and Hasdrubal, son-in-law of Hamilcar, the founder of Carthago Nova, in Spain. The last of the family, a Hasdrubal also, when Carthage fell, buried himself in the ruins of its last blazing temple.

BARCAROLLE (It. *barcaruolo*, a boatman), a term designating the melodies composed and sung by the Venetian gondoliers. The simplicity, beauty, and nationality of many of these songs, have made them great favorites with the Italians, and composers have frequently employed their form, and even borrowed their ideas, to illustrate some peculiar phase of national character. The barcarolle is not exclusively a nautical air, but often reflects the feelings and daily life of the people, like the German *Volkslied*, or the Scotch or Irish ballads; and from the fact that the gondoliers have free access to the theatres of Venice, and are thus enabled to cultivate a taste for music, its construction is often marked by a grace and refinement scarcely to be expected in uneducated musicians. The associations of the place in which it originated, however, undoubtedly add much to the romantic charm with which it is invested. The familiar airs, *La Biondina in Gondolotta*, and *O Pescator dell'Onde*, are good specimens of the barcarolle.

BARCELONA, a city and seaport of Spain, on the Mediterranean, capital of the province of Catalonia, situated in a fruitful plain, between the rivers Besos and Llobregat, at the foot of Montjoi (*Mons Jovis*), 315 miles E. N. E. of Madrid. It is the great manufacturing

and commercial emporium, and one of the finest cities in the peninsula. The N. W. part, which is called the new city, is pretty well built, the houses, mostly of brick, being generally from 4 to 5 stories high, with numerous windows and ornamented balconies. It contains some fine squares and promenades. The old city has narrower and more crooked streets, but is not deficient in beauty for the lovers of the picturesque. It is interspersed with remains of antiquity, among which a gate, some towers and walls, serve to trace distinctly the limits of the old Roman town. Among the public buildings, we may notice especially the palace of the audiencia, where the archives of the kingdom of Aragon are preserved; the city hall, the *lonja*, or exchange; the custom-house, and the theatre, one of the largest and handsomest in Spain. The cathedral is a noble structure, in the later Gothic style, with finely painted windows. We must also mention the church of St. Mary of the sea, that of St. Michael, which is said to be an ancient temple of Neptune, and the 2 convents of mercy and St. Olara. Barcelona has some fine public walks; the principal is the *rambla*, which divides the new from the old city, and is always crowded, being only inferior to the boulevards of Paris. There is also a charming promenade round the ramparts, with delightful views, particularly toward the sea. The fortifications are important; beside the walls, ditches, and batteries which surround the city, it is protected on the N. E. by a citadel, forming a regular octagon on the system of Vauban; on the sea-side by the fort of San Carlos, communicating with the citadel by a double-covered way, and the fortress Montjoi, on the mountain of that name, which commands the port as well as the town. This last stronghold, if properly garrisoned, is regarded as impregnable. The harbor is formed by an immense mole running to a considerable distance in a southern direction, having a light-house and a battery at its extremity. Unfortunately, it is not entirely finished; if it were, the port of Barcelona would be one of the largest, most commodious, and safest of the Mediterranean coast of Spain.—Barcelona is the residence of the captain-general of Catalonia, of the audiencia real of that province, and of a bishop. It has 4 public libraries, an ecclesiastical seminary, 8 colleges, a school for the deaf and dumb, a college of surgeons, an academy of practical medicine, an association for promoting art and science, hospitals, a founding institution, and other charities; but above all must be mentioned the *junta de comercio*, or board of trade, which supports with a princely liberality public professorships of navigation, architecture, painting, chemistry, experimental philosophy, agriculture, commerce, mechanics, and the foreign languages. With such resources at their disposal, and incessant intercourse by trade with other nations, the inhabitants are more enlightened than those in the other parts of

Spain.—The historical records of this city are not devoid of interest. Founded, if tradition is to be credited, by Hamilcar Barca, the father of Hannibal, from whose name it was called *Barcino*, it passed with the whole peninsula under the dominion of the Romans, who sent here a colony under the symbolical name of Faventia. Subjugated by the Goths in the 5th century, then by the Arabs in the 7th, it was reconquered from the latter by the Christians, aided by Charlemagne, as early as 801, when it was governed by counts, who, although nominally vassals of the Carolingian kings, were in reality independent sovereigns till the end of the 12th century. Then Barcelona became attached to the kingdom of Aragon, preserving, however, its most important privileges, as well as its love for independence and liberal institutions. During these ages, its citizens were no less distinguished for the zeal and success with which they prosecuted commercial undertakings, than by their enlightened mercantile policy. Successful competitors of the Italian merchants in the commerce of the Levant, they were among the first to establish consuls and factories in distant countries for the protection and security of trade. The famous code of maritime law, known by the name of the *Consolato del Mare*, is said to have been compiled and promulgated in Barcelona, while the practice of marine insurance and the negotiation of bills of exchange would seem to have been in use here at a very early period. Liberal ideas kept pace with commercial prosperity, and Barcelona has shown in modern times that it is still animated by the same generous and patriotic spirit. The part it has played in all the national struggles, is important; but at the same time it has undergone many severe trials. During the peninsular war, it was several times occupied by French troops; and the emancipation of South America was a heavy blow to its prosperity, several branches of manufacture having in consequence declined, or altogether disappeared. In 1821, the yellow fever, raging with uncommon fury, swept off a 5th part of the population; and as late as 1848, the city, having revolted against Queen Isabella, was bombarded by the order of Espartero.—Amid all these losses, evils, and political difficulties, Barcelona has maintained its rank among the first cities of Spain; and little would be necessary to revive its manufacturing activity and give a new impulse to its yet not inconsiderable trade. The only remaining manufactures are those of silk, leather, lace, wool, and cotton, but none of them are flourishing. The principal imports, mostly from S. America, Cuba, and Porto Rico, are cotton, sugar, hides, cocoa, cinnamon, dyewoods, indigo, coffee, horns, staves, &c. Fish come from Sweden and Denmark. Smuggling is carried on upon a large scale, especially along the French frontier. The exports consist merely of wrought silk, soap, fire-arms, hats, lace, ribbons, and steel. One hundred and twenty-eight vessels, being in

all of 15,180 tons burthen, entered the port in 1881. The population is estimated by some at 120,000, by others at 150,000.

BARCKHAUSEN, JOHANN KONRAD, a German physician and chemist, rival of Boerhaave, born at Horn, in Westphalia, March 16, 1666, died Oct. 1, 1728. He studied medicine and pharmacy at Berlin, Mayence, and Vienna, and afterward accompanied the Venetian troops into the Morea. In 1694, he gave lectures on chemistry at Utrecht, and received the degree of M.D. in the university, where he afterward occupied the chair of chemistry. He had a great and widely extended reputation, and made some discoveries of value in chemistry.

BARCLAY, ALEXANDER, is supposed to have been born in Scotland, about the end of the 15th century; this is, however, uncertain, as some authors state that he was born in the town of Barclay, in Somersetshire. He died in 1552. He was educated at Oxford, travelled through Europe acquiring a knowledge of several languages, entered the order of St. Benedict, and afterward that of St. Francis. He became vicar of Great Badow in Essex, of Wokey in Somersetshire, and received finally from the dean and chapter of Canterbury, the rectory of All-Saints in Lombard street. The latter part of his life was passed in Croydon, where he was buried. In his youth he had the reputation of being a good poet and orator, but his later years were devoted to religious studies. He wrote with considerable facility on various subjects; his most noted work is entitled "The Ship of Fools," a translation from Sebastian Brandt, but with notes and additions by himself; it was printed by Pynson in 1509. He also wrote "The Castle of Labour," printed by Wynkyn de Worde in 1506. Beside these he wrote the lives of some of the saints, a work on the pronunciation of the French language, and translated Sallust's "Jugurthine War," and other works. His eclogues are noted for being the earliest specimens of English pastoral poetry. Barclay wrote at a period when the taste for literature in England was stagnant, and was successful in its revival and improvement.

BARCLAY, JOHN, a French poet and theologian, born at Pont à Mousson, Jan. 28, 1583, died at Rome, Aug. 12, 1621. He was the son of William Barclay of Aberdeen, and received his education at the Jesuit's college of Pont à Mousson. The abilities which he manifested in his youth attracted the attention of the Jesuits, and they made powerful efforts to induce him to join their order, which were, however, frustrated by his father, who carried him to England in 1603, where young Barclay soon gained the favor of James I., by presenting to him a Latin poem, and afterward dedicating to him his "Satyricon," the first part of which appeared about this time. In 1604, the father and son returned to France, and resided in Angers, where, however, John remained but a short time, revisiting England in 1605, in hopes of obtaining some appointment, and remaining there about

a year without success. He afterward removed to Paris on the death of his father, and the year 1606 found him again residing in London with his wife. From this period until 1615, Barclay continued in England, where he completed his "Satyricon," and published also several tracts and controversial works, among others one disputing the right of the pope to temporal power. This was warmly attacked by Cardinal Bellarmine, and defended by Barclay with considerable energy in a ponderous Latin volume, published in 1618. Not having met with that success in England which he anticipated, Mr. Barclay removed to Paris in 1615, but remained there only a year, when he proceeded to Rome, having received an invitation from Pope Paul V. While there, he published a work addressed to sectarians, evidently intended as an apology for his earlier heretical opinions. But fortune seemed still to frown upon him, and he does not appear to have met with any greater pecuniary success in Rome than had attended him elsewhere. There, however, he had ample time to pursue his various studies. In his leisure hours he devoted himself for amusement to the cultivation of tulips, which, commenced as a pastime, with him soon became a mania. But notwithstanding the apparent lack of purpose and usefulness in his life at this period, it was at Rome that Barclay composed and produced his greatest work, *Argenis*, a Latin romance, and one whose popularity was not exceeded by any of its time. This work was greatly admired by Leibnitz, and by Cardinal Richelieu, who is said to have obtained from it many valuable political maxims; Cowper also mentions it in his letters in terms of praise; Joseph Scaliger has, however, criticized it with considerable severity. Whatever may be said of its merits, the *Argenis* has undoubtedly been more widely read than any other work of the period, having been translated into nearly every modern language, including the Polish, Swedish, and even the Icelandic, as a copy in MS. in that language is now in existence, although it has never yet been published. Barclay was an indefatigable writer, and produced many works, varying in merit; he appears to have given his pen great license, and took it upon himself to combat fiercely any opinion which did not coincide with his own convictions. He was a man possessing varied talents and great learning. His *Argenis* is perhaps the only work of its kind which has so long survived its author.

BARCLAY, JOHN, M.D., a Scotch anatomist, born in Perthshire, 1760, died in Edinburgh, 1826. He studied divinity at the united college of St. Andrews, and was licensed as a preacher at Dunkeld. In 1789, he visited Edinburgh as tutor in the family of Sir James Campbell, where he commenced the study of anatomy. He acted as assistant to Mr. John Bell, and graduated in 1796, when he visited London and studied under Dr. Marshall. On his return to Edinburgh in 1797, he gave lectures on anatomy. He published several works on subjects

connected with the sciences of medicine and surgery; he also made some efforts toward reforming the system of nomenclature then in use among anatomists. He bequeathed his valuable anatomical collection to the royal college of surgeons of Edinburgh, where it is known as the Barclayan museum.

BARCLAY, ROBERT, a distinguished member of the society of Friends, born at Gordonstown, Scotland, 1648, died Oct. 18, 1690. He was eldest son of Col. David Barclay, of Ury, and received his education at the Scots' college in Paris, where he ceased to be a Calvinist, and became a Roman Catholic. At the age of 15, he returned to Scotland, where he found that his father had become a member of the society of Friends, a sect then recently established. At the age of 19, again changing his belief, he avowed himself a Quaker. Well read in the dead languages, and in the literature of England and France, he now applied himself to the study of the fathers of the church and ecclesiastical history. His natural abilities were great; his moral courage great also. His pen was devoted to the service of the Quakers, particularly to justify their doctrines to the public. He replied to various attacks on them, and his personal character gave force to his voluntary championship. In company with the famous William Penn and George Fox, he made a sort of religious tour in Holland and Germany, in 1677. After having written several pamphlets and treatises in vindication of his sect, he finally published his most elaborate work, on which his literary reputation mainly rests, entitled, "An Apology for the true Christian Divinity, as the same is held forth and practised by the people called, in scorn, Quakers." This was originally printed in Latin, but afterward translated into English by the author. As a defence of a peculiar system of theology, it was assailed by learned writers at home and abroad—particularly on its avowed declaration of the necessity of an inward and immediate revelation. The only reply in vindication of this doctrine was written in Latin by Barclay (while a prisoner for conscience' sake in Aberdeen), on the suggestion of Adrian Paets, the Netherlands ambassador. It was the author's closing literary labor. The effect of Barclay's writings was not merely to propagate the doctrines of the society of Friends, but to rectify public opinion concerning them, and to insure for them greater indulgences from the government. To this day, his "Treatise on Christian Discipline," is a standard authority on the government of his church. Robert Barclay was personally known to Charles II., who treated him with marked respect, and, in 1679, presented him a charter for erecting his estate of Ury into a free barony, with civil and criminal jurisdiction for his heirs—a privilege enjoyed by the family until the legal extinction of such grants in the reign of George II. In 1682, the proprietors of the American province of East Jersey, among whom was his particular friend the earl of Perth, ap-

pointed him governor. He served the office by deputy. His two brothers went to settle in the Jerseys; the younger died on the passage. The remainder of Barclay's years were placidly spent in private life. He was only 42 when he died, leaving 7 children, all of whom were living 50 years afterward. The last of them, Mr. David Barclay, a mercer in Cheapside, London, on the direct route to Guildhall, entertained 8 successive monarchs—George I., II., and III.,—on their first visits to the city on lord mayor's day.—ROBERT, a descendant of the above, born 1750, died at his seat Bury Hill, in 1830, was, according to Boswell's Johnson, "remarkable for maintaining the principles of his venerable progenitor with as much of the elegance of modern manners as is consistent with primitive simplicity." He was one of the fortunate purchasers of the famous brewery.—CHARLES, son of the foregoing, born in 1781, died, from a fall from his horse, at his seat Bury Hill, Surrey, Dec. 5, 1855. For some time he was a member of parliament for the western division of Surrey, and afterward officiated as high sheriff of the same county. He was highly esteemed for his zeal in all educational and charitable enterprises of that and the neighboring districts, with all of which he was more or less officially associated. But he was principally distinguished as chief partner of the famous London brewery of Barclay, Perkins, and Co. Toward the close of the 17th century, this establishment was in the hands of Edmund Halsey, who became afterward a member of parliament, and was knighted under the name of Sir Edmund Halsey, of Deadman's place. This was the former name of the locality of the brewery, which is now called Park street. After his death, the brewery was conducted by his heir and nephew, Ralph Thrale, the father of Henry Thrale, who became celebrated by his and his wife's friendly relations with Dr. Johnson. Dr. Johnson was one of Thrale's executors, and on being questioned about the value of the property, the philosopher said, "Sir, we are not selling mere vats and boilers, but the potentiality of becoming rich beyond the dreams of avarice." In 1781, Robert Barclay purchased the brewery for \$875,000, in conjunction with Mr. Perkins, who had been Thrale's manager, at an annual salary of \$2,500, and who now became a partner in the establishment.

BARCLAY, CAPT. ROBERT. See ALLARDICE.

BARCLAY, WILLIAM, a Scottish civilian, of Catholic tenets, born in Aberdeenshire in 1546, died at Angers, France, in 1605. In early life he was attached to the court of Mary, queen of Scots, but in 1573 emigrated to France, and studied civil law under Cujas, at Bourges. Here he took his doctor's degree, and was soon after appointed professor of the civil law in the university of Pont-à-Mousson, recently founded by the duke of Lorraine. In 1581 he married Anne de Malleville, by whom he had his distinguished son, the author of *Argenis*. In consequence of a difficulty with

the Jesuits, respecting this youth, his residence at the university became unpleasant, and he migrated from France into Britain, where King James offered to patronize him if he would become a member of the church of England. Being conscientiously attached to his own opinions, he declined the offer on these conditions, and eventually returned to France in 1604, and was appointed first professor of the civil law in the university of Angers, where he died. In 1600 he wrote a work in favor of the rights of the king against the other powers of the state, and directed at the republican doctrines of his countryman, Buchanan, which was much relished by James. He also wrote against the temporal power of the pope.

BARCLAY DE TOLLY, MICHEL, Russian prince and field-marshal, born in Livonia in 1759, died at Insternburg, in East Prussia, May 25, 1813. In 1769, when not yet 11, he entered the Russian army, and served during 29 years in its different campaigns against the Turks, Swedes, and Poles, but did not emerge from the inferior ranks before 1798. He distinguished himself in the campaign of 1806. His military reputation dates from the year 1807, when, at the head of the Russian vanguard, he most gallantly defended Prussian Eylau, making a prolonged stand in the streets, the church, and the churchyard of that town. In 1808 he forced the Swedes back into Carelia, and, in 1809, as general of infantry, imitated, on a much larger scale, the celebrated march of Charles Gustavus over the frozen waters of the Little Belt, by marching 12,000 Russians with artillery, ammunition, provisions, and baggage, over the ice which covered the gulf of Bothnia. He took Umea, celebrated by his appearance the revolution preparing against Gustavus IV., and compelled the Swedes to sue for peace. After 1810 he was intrusted with the direction of the Russian war ministry. In 1812 he assumed the command of the 1st army of the west. Its principal corps, at the head of which he placed himself, and which official reports had swollen to 550,000 men, proved, in fact, to consist of 104,000 only, while the aggregate of the troops stationed from the coasts of the Baltic to the banks of the Pruth, did not muster beyond 200,000. Thus the retreat of the Russian army, the original design of which Napoleon, in his memorials of St. Helena, falsely attributed to Barclay de Tolly, and which, long before the rupture between Russia and France, had been elaborated by the Prussian general, Phull, and after the declaration of war, was again pressed upon Alexander by Bernadotte, had now become not a thing of choice, but of dire necessity. While Barclay de Tolly had the great merit of resisting the ignorant clamors for battle which arose from the Russian rank and file, as well as from headquarters, he executed the retreat with remarkable ability, incessantly engaging some part of his troops in order to afford to Prince Bagration the means of effecting a junction with him, and to Admiral Tschitschagoff the facilities for

falling in the rear of the enemy. When forced to a battle, as at Smolensk, he took a position which prevented the battle from becoming decisive. When, not far from Moscow, a decisive battle was no longer to be avoided, he selected the strong position of Gzhatsk, hardly to be assailed in the front, and to be turned only by very extended roundabout ways. He had already posted his army when Kutusoff arrived, in whose hands the intrigues of the Russian generals, and the murmurs of the Muscovite army against the foreigner heading the holy war, had placed the supreme command. Out of spite against Barclay de Tolly, Kutusoff abandoned the lines of Gzhatsk, in consequence of which the Russian army had to accept battle in the unfavorable position of the Borodino. During that battle, Aug. 26, Barclay, commanding the right wing, was the only general who held his post, not retiring until the 27th, thus covering the retreat of the Russian army, which, but for him, would have been completely destroyed. After the retreat from the Borodino, beyond Moscow, it was Barclay de Tolly again who prevented any useless attempt at a defence of the holy city. During the campaign of 1813, Barclay took the fortress of Thorn, April 4, 1813, vanquished Lauriston at Konigs-wartha, covered, after the defeat of Bautzen, May 8, the retreat of the allied army, won the battle of Górlitz, contributed to Vandamme's capitulation, and distinguished himself in the battle of Leipsic. During the campaign of 1814 he commanded no independent corps, and acted in an administrative and diplomatical, rather than in a military character. By the stern discipline he imposed upon the troops under his immediate control, he won the good opinions of the French people. On Napoleon's return from Elba, he arrived too late from Poland to assist at the battle of Waterloo, but partook in the second invasion of France. He died on a journey to the bath of Carlsbad. The last years of his life were darkened by calumny. He was, beyond question, the best of Alexander's generals, unpretending, persevering, resolute, and full of common sense.

BAR-COKEBA, a famous Jew, who, during the reign of Hadrian, raised a violent insurrection among the Jews in A. D. 131, claiming to be the Messiah. His claim was supported by a distinguished Jewish rabbi, Akiba, and sustained by a popular tradition that on the day of the destruction of Jerusalem (the birthday of Bar-Cokeba) the Messiah was born. Julius Severus, the commander of the Roman forces, being absent in the east, Bar-Cokeba seized the opportunity, raised a force of 200,000 Jews, and took possession of Jerusalem, and many fortified places and open towns, before the Roman army could be recalled to subjugate them. The professed aim of Bar-Cokeba was to free the Jews from the Roman yoke, which, under Hadrian, owing to the mutinous disposition of the people, had been peculiarly severe. Hadrian had forbidden in his Jewish provinces the ob-

servance of the Sabbath and circumcision, and the reading of the law, and had entered into measures for establishing a regular colony of Greeks and Latins in the city of Jerusalem. Under these aggravations, the Jews were ripe for rebellion, and flocked to the standard of Bar-Cokeba with the same enthusiasm which 60 years before had characterized their fathers at the destruction of their city. Bar-Cokeba recoined the Roman money in circulation in Palestine, stamping it with his own superscription. From one of these superscriptions, his real name is conjectured to have been Simon. He claimed that the prophecy of Balaam, "there shall come a star out of Jacob," had reference to him, and therefore called himself Bar-Cokeba, or "the Son of the Star." He was finally subjugated and slain by Julius Severus, in the siege of Bether. The insurrection of Bar-Cokeba cost 880,000 lives, and lasted about 4 years, utterly to desolate the hope of the Jewish nation for deliverance. Hadrian established a colony in Jerusalem, called it *Ælia Capitolina*, and made it capital for a Jew even to enter its precincts. Appealing to Jewish prejudice to second his determinations, he placed the image of a sow over the Bethlehem gate of the city, and the Jewish Christians took refuge east of the Jordan, where they perpetuated themselves as a church, down to the 5th century.

BARD (in Cymric, *bardh*, in Gaelic, *bard*), a professional poet, who made his livelihood by singing the amours and battles of gods, the deeds of heroes, the glory and genealogy of chiefs, and the victories of tribes over their enemies. The Roman poet Lucan mentions his name and functions in these lines (lib. i.):

Yos quoque, qui fortes animas belloque peremptas
Landibus in longum vates dimittitis ævum,
Plurima securi fuditis carmina Bardis;

well translated by Rowe,

You, too, ye Bards! whom sacred raptures fire
To chaunt your heroes to your country's lyre;
Who consecrate in your immortal strain
Brave patriot souls in righteous battle slain.

Such a profession, by whatever name called, is an element in a certain stage of civilization, and is one of the first intellectual outgrowths of a people who have attained to some degrees above savagery. They were called *Aoidoi*, or rhapsodists, by the Greeks, *Vates* by the Latins, *Scalds* by the Scandinavians, *Scopes* by the Anglo-Saxons, *Ollamhs* by the Irish, and *Baydarses* and *Spiewakis* by the Slavonians. In ancient Gaul, as Cæsar found it, the bards were a subdivision of the druids, or the priestly and learned order. The bard-druids, like every other branch of the order, were carefully instructed in their art by oral inculcation. Cæsar says that they spent 20 years in their education, which required the knowledge by rote of an immense number of verses, which they would not record in writing, but handed down by word of mouth from generation to generation. After the subjugation of Gaul to Roman arms, this patriotic and popular profession, with its

stirring strains and hatred of the foreign domination and foreign civilization, was found by the Roman emperors and senate to be a nuisance, was put under restrictions, and eventually annihilated by the Roman civil power in Gaul, and also in that part of Britain which fell within the pale of Roman civilization. As the Christian missionary drove out the Gallic pagan priest, so the Roman governor crushed the Gallic and British bard. Hence it happens that of bards and bardism in Gaul and England, we have but a few scanty notices. Fortunately for the institution, Wales, Cornwall, Cumberland, and Strathclyd, only remotely affected as they were by the Roman conquest, kept alive the sacred flame of minstrelsy, and this wild, rude country alone offers us the opportunity of meeting the bards, as it were, face to face, and knowing intimately their mode of life, their works, and their history. In the parish of Llanidan, in the isle of Anglesey, are the remains of an archdruid's palace, surrounded by the several colleges into which druidism was divided. One of these colleges, or independent buildings, is called by the peasantry, at this day, *trer beird*, or hamlet of the bards. But the bard-druid long survived the priest-druid. The downfall of the Roman empire relieved the bards of their special enemy, and they continued to flourish thenceforth down through the whole course of the middle ages, in Wales and all those countries where they or their corresponding class had not been already extirpated by Roman culture. The Christian ecclesiastics were content with dispelling the ancient paganism and transforming the pagan druids into Catholic priests, and did not seek to molest the bards of Wales until 1078. What the shepherd's crook is to the shepherd, or the portable organ to the Italian minstrel of our streets, was the harp or *croft* (Irish, *crúit*) to the bard. The laws of Howel Dha, the Welsh potentate, given about A. D. 940, afford a life-like picture of the British rhapsodist. Each chief of a clan had a bard, whose office was hereditary in the family. The *bardd teulu*, or court bard, was a domestic officer of the court of Howel and his successors. He occupied the 8th place in order of precedence, held his land and lodging free, and was supplied by the ruling prince with a horse and a woollen robe, and by his queen with a linen garment. At the feasts of Christmas, Easter, and Whitsuntide, his duty was to sit next to the master of the ceremonies, favor the company with minstrelsy, and receive the steward's robe as his fee. The bard who had won in the musical contest of the day was to sing, first to the glory of God, secondly to the glory of the prince, and then the *teuluier*, or regular court-bard, was to sing on the topics of the day. When he went on a foray with the prince's bands, he was to have an ox or a cow given him as his share of the booty, and was to sing the praises of the ancient Britons on all occasions of this and kindred nature.

This was to give a color of righteousness to their aggressions, for as the slaughterous roads of the Cymri were generally made upon the industrious and wealthy Englishmen or Saxons who dwelt in the plain, the plunderers thought they did no more than seize their own again. On investment, the court-singer received a harp from the prince, and a ring of gold from the queen. If the court-bard condescended to perform in the halls of the nobility, he must demand a double fee. If he asked any favor of a commoner, he must sing till he fell asleep from sheer weariness; but if of a nobleman, his want of self-respect might be atoned for by the composition of 3 odes. If an assault was committed upon the inviolable person of a royal bard, the offender must pay a fine of 6 cows and 120 pence; his blood-money, in case death ensued, was rated at 126 cows. His daughter, on marriage, was worth 120 pence to him. The pagan tendencies of these artists at last drew down upon them the reforming scourge of Christian ecclesiasticism. The stroke fell upon them from the hand of Gryffyth Conan, prince of Wales, in 1078, and from this period dates their decline. The edicts of Conan afford another glimpse of the general classification of the bards, still more valuable than that which we get from the laws of Howel Dha. Many of the Welsh bards abandoned their profession at this change, and their places were supplied by pious and accomplished ollamhs from Erin, who introduced into Wales, as Powell, the historian of Cambria, informs us, all the instrumental music for many centuries in use there, "as appeareth, as well by the books written of the same as also by the names of the times and measures used among them to this (Powell's) day." The bards were classified in several ways: 1, the bards of the princes and nobles, or *prydidd*; 2, bards of the middle ranks, or *seimar*; 3, bards for the lower classes, or *clewyr*. We learn that there were 8 special sub-classes, viz., composers, instructors of the rising generation, and heralds. Some, and these were the most obnoxious to the Christian authorities, set up as men possessed of the faculty of second-sight, as diviners, soothsayers, interpreters of dreams, &c. The highest rank of bards, who styled themselves *hys ymys prydain*, were distinguished by their cerulean garment, never wielded weapons, fought single combats, and their mere presence made the drawing of the sword, for any purpose, a punishable offence. For mutual encouragement and instruction, public sessions of the Welsh bards (*cistedd fode*) were held for many centuries at the town of Caerwys, the residence of the prince of Wales, at Aberffraw, in Anglesey, for the bards of that island and the adjacent county, and at Mathra, for those of the district of Powis. Pennant, in his tour of Wales and them the British Olympian, Nemean, and Pythian games. Only minstrels of skill performed. Prizes were conferred according to the manner in which the victors had perfected themselves. "No public festivity, great feast, or wedding

could be duly solemnized without the presence of the bards and minstrels. A great emulation arose among them, and prizes were bestowed on the most worthy. In 1176 the lord Rhys, prince of South Wales, made a great feast at Christmas on the occasion of finishing his new castle at Aber-teifi, of which he proclaimed notice through all Britain, a year and a day before. Great was the resort of strangers, who were nobly entertained, so that none departed unsatisfied. Among deeds of arms and variety of spectacles, Rhys invited all the bards of Wales, and provided chairs for them, which were placed in his hall, where they sat and disputed and sang to show their skill in their respective faculties; after which, he bestowed great rewards and rich gifts on the victors. The bards of North Wales won the prizes, but the minstrels of Rhys's household excelled in their faculty. On this occasion, the Brawdwr Llys, or judge of the court, an officer 5th in rank, declared aloud the victor, and received from the bard, for his fee, a mighty drinking-horn, made of the horn of an ox, a golden ring, and the cushion on which he sat in his chair of dignity." (Pennant's "Tour in Wales.")—After the conquest of Wales by Edward I. of England (1284), the bards suffered another terrible blow. Their Welsh patriotism was formidable to English dominion, and it became necessary to curb their utterances. A royal commission was issued, which presided over the eisteddfods, and acted the part of censors and inquisitors. No bardic poem was allowed to be circulated which appealed to the patriotic sentiments of the conquered race, and tended to rouse them against the conquerors. The story of the massacre of the Welsh bards and the destruction of their records, is a fiction, originating in Edward's stringent measures against the right of free song. The last eisteddfod held under royal commission was held in the reign of Elizabeth, queen of England and Wales, at Caerwys, in 1569. The copy of this commission is in possession of the Mostyn family, together with a silver harp, which had from time immemorial been in the gift of the Mostyns to bestow on the chief of the faculty. The harp is 6 inches long, with 9 strings. In 1569, the victor of the silver harp was Simon ap Williams ap Sion. At this eisteddfod various persons received degrees, some as chief bards of vocal song, others as primary, secondary, or probationary students; and many more as bards, students, and teachers of instrumental song upon the harp. Players upon the historic *crotch*, with 8 strings, taborers, and pipers, were reckoned a low and ignoble class; they were not allowed to sit down, and had only a penny fee for their attendance and performances. The degrees consisted of 4 in the poetical, and 5 in the musical faculty. Toward the end of the last century, some patriotic Welsh gentlemen determined to revive the eisteddfod. In 1770, the Gwyneddigion society was formed, in 1818, the Cambrian society, and about 30 years ago, the Cymmoridian, or metropolitan Cambrian institution, of which George IV. of England de-

clared himself the patron. Annual meetings have since been held for the recitation and reward of prize poems, and performances upon the harp; and reports of the modern eisteddfods find their way into the columns of the London "Times," and startle the prosaic Saxon reader with a momentary wonder at the outlandishness of the names, and the imaginative fervor of the sons of the principality. The above-named societies have been instrumental in preserving relics of the poems of Myrddyn ap Morfryn, Myrddyn Emrys, Taliesin, and other less celebrated composers of triads.—The Germans had no bards, so called, although an attempt has been made by reading *barritus* in the Germania of Tacitus, as *barditus*, to build up a contrary theory.

BARD, JOHN, an American physician, born near Philadelphia, in Feb. 1718, died March 30, 1799. He was of a family which had fled from France upon the revocation of the edict of Nantes. After receiving the rudiments of a classical education in Philadelphia, he was, at the age of 15 years, apprenticed to a surgeon of excellent talents, but of harsh disposition, with whom he passed unhappily 7 studious years. He practised his profession a few years in Philadelphia, but removed to New York in 1746, where, by the pleasantness of his manners and conversation, as well as by his professional skill, he rose to the first rank among physicians. In 1759, the citizens of New York were alarmed by the arrival of a ship, on board which a malignant fever was raging, and Dr. Bard was appointed to take measures to prevent the disease from spreading. He succeeded in keeping the pestilence within the limits of a temporary hospital, but to guard against similar dangers in future, at his suggestion, Bedloe's island was purchased, and hospital buildings erected thereon, which were placed under his charge. He retired for a time to rural life, but after the revolution returned to New York, where he continued the practice of his profession to an advanced age. Upon the establishment of the New York medical society in 1788, he was elected its first president. In 1795 he displayed his professional ability by detecting the yellow fever in New York, which he had not before seen for nearly 40 years. He left an essay on the malignant pleurisy, and several papers on the yellow fever, and the evidence of its importation into this country.

BARD, SAMUEL, an American physician, son of the preceding, born in Philadelphia, April 1, 1742, died May 24, 1821. He studied in the schools of his native city, acquired an enthusiasm for botany during a summer residence at Coldenham, where he became acquainted with Miss Colden, well known as a correspondent of Linnaeus, and at King's, now Columbia college, in New York city, he received a thorough classical education. He adopted his father's profession, and pursued his studies in the medical school of Edinburgh, which was then in the highest repute. On his passage he was captured

by a French vessel, England being at that time in war with France, and was rescued from foreign imprisonment only by the influence of Dr. Franklin, who was then residing in London. At Edinburgh, where he arrived in 1762, and remained 8 years, he made remarkable proficiency in his professional studies, particularly in botany, and took his medical degree. He then travelled through Scotland and parts of England, studying minerals, plants, animals, arts, and manufactures, and returned to America in 1767. He entered at once upon the exercise of his profession in New York, in partnership with his father, and was quickly able to liquidate the expenses of his education. He effected the organization of a medical school, which was united to King's college, and in which he was appointed to the department of the practice of physic, and subsequently became dean of the faculty. Medical degrees were first conferred in 1769, when a public address was delivered by Dr. Bard, with a persuasive eloquence which was one of his titles to distinction. During the excitement which preceded the revolution, his loyalty rendered him averse to violent measures, and after the capture of New York by the British, he narrowly escaped punishment as a rebel. After the return of peace, he was for a time an object of suspicion to his countrymen, till Washington, while the general government was sitting in New York, showed his appreciation both of his patriotism and medical skill by selecting him as his family physician. Through his influence a public hospital was opened in New York in 1791, and he was appointed its visiting physician. He retired, in 1798, to his country seat in New Jersey, and there devoted himself with zeal to agricultural pursuits and to general reading. He was a skilful horticulturist, and collected fruits, particularly melons, from England, France, and Italy; and he had a flourishing green-house, in which he took delight to the last days of his life. He cherished associations with men of his own profession, visited New York frequently, and in 1818, was appointed president of the college of physicians and surgeons of that city. He survived but a few hours the death of his wife, and was regretted as the finest model, not only of the learning but of the manners of the physician.

BARD, WILLIAM, an eminent merchant of New York, born there in 1777, died Oct. 17, 1858. He was of Huguenot descent, was graduated at Columbia college in 1797, and took up his residence at Hyde Park, on the Hudson, devoting himself to agriculture and the cultivation of his literary tastes. Being brought into connection with many of the leading merchants of New York, by the marriage of a daughter to Edward Prime, he was probably induced through these associations to engage in the business of life insurance. Accordingly, in connection with T. B. Wakeman, and others, he obtained in 1830 an act of incorporation for the New York life insurance and trust company, for the purpose of life insurance, and with powers for the receipt

and loan of money on trust. The capital of the company was fixed at \$1,000,000, but its loans and liabilities frequently exceeded 6 times that amount. He was the first president of the company, holding this place for 13 years, and was then their actuary for some years longer, after the defalcation of their secretary, and the course of their business had involved the company in a financial catastrophe, and in immense and interminable lawsuits. But his own integrity was never assailed, and his services in directing the attention of the community toward the subject of life insurance, then almost unknown in this country, are thought to have been of great value, and to entitle him to be reckoned among public benefactors.

BARDAS, a patrician of Constantinople, brother of the empress Theodora, and uncle to the emperor Michael III., assassinated by Basil, the Macedonian, April 21, 866. The sciences, which had decayed since the burning of the library of Constantinople by Leon the Isaurian, were partially restored by Bardas, who was a man of learning. He had been appointed, on the death of Theophilus, one of the tutors to the young prince. Ambitious to increase his power, Bardas procured the death of those likely to impede his progress, including Theoctiste, general of the troops, whose command he seized. He also imprisoned his sister the empress, and drove from his side the patriarch Ignatius. Having assumed the title of Cæsar, he hoped to become emperor, and appeared before Michael in imperial robes to intimidate him; he was, however, seized by the order of the emperor and stabbed.

BARDESANES, a Gnostic, who flourished in the 2d century of the Christian era, and founded an inconsiderable sect on some peculiarities of his own system, designated as Bardesaneism. The common opinion is that Bardesanes was a disciple of Valentine, but Neander thinks rather both Marcus and Bardesanes drew from the same fountain as Valentine, the Syro-Gnosticism. From the fact that Bardesanes wrote afterward against the Gnostics, and still later, showed himself a Gnostic again, he has been accused of being fickle, and Eusebius says of him that, although he refuted in a time most of the opinions of Valentine, he did not entirely wipe away the filth of his heresy." But there were many sects of Gnostics, and it was customary for sects among the Gnostics to write against each other—Neander thinks there is no evidence that Bardesanes was other than a Gnostic in the whole of his career as a theologian. Bardesanes differed from the orthodoxy of his day mainly on 8 points: he believed the devil to be an existent and independent; that Christ was the son of a woman, but brought his body from heaven; and he denied the doctrine of the resurrection of the human body.

BARDILI, CHRISTOPH GOTTFRIED, a German philosopher, born at Blaubeuren, in Württemberg, May 28, 1761, died at Stuttgart in 1812.

first obtained distinction by his work on the elements of logic, published in 1800, and directed, as a *medicina mentis*, against the then prevalent philosophy of Kant. He was an obscure writer, and even Germany found difficulty in discovering his meaning; but his system contains the germ of the later philosophy of absolute identity. He published other writings, which, like his first, indicate more earnestness of spirit than clearness of style.

BARDIN, JEAN, a French historical painter, born at Montbard, Oct. 31, 1782, died at Orleans, Oct. 6, 1809. Having escaped the drudgery of learning a trade, for which his parents had destined him, he was enabled to finish his studies in painting in Rome, whence he went to Paris, and, in 1764, gained the prize for his picture of "Tullia driving over the Body of her Father." He continued for many years to paint in Paris, where his designs were much admired. His *chef-d'œuvre*, "Christ disputing with the Doctors," procured him admission to the academy in 1795. Among his pupils were David and Regnault.

BARDINGS, horse-armor of the chivalric ages. It consisted: 1, of the chamfron, or chafron (Norman Fr. *cheveron*), guarding the forehead and face, with a steel spike, like the horn of the unicorn, projecting between the eyes; 2, of the manifaire, a series of articulated plates, covering the crest and ridge of the neck, from the ears to the bows of the steel-plated saddle; 3, of the pottrel, a piece of solid plate armor, defending the whole shoulders and chest, from the insertion of the throat to that of the fore-arms forward of the saddle; 4, of the bard proper, protecting the whole croup and rump of the charger, from the castle of the saddle to the tail. These bardings were very costly, the best being made at Milan, or in Spain, where the steel was of the highest temper, and were often beautifully engraved, enamelled, or oxidized, and then polished, in order to give it a russet hue, which was the height of military dandyism in the latter days of coat-armor, and inlaid with gold or silver, in arabesques or heraldic devices.—This word is often written, incorrectly, barbed, but barded is the correct word, derived from the bard proper, or covering of the croup; thus, in the "Lay of the Last Minstrel:"

Never heavier man and horse
Stemmed a midnight torrent's force;
For the steed was barded from counter to tail,
And the rider was armed complete in mail.

BARDNEY, a parish of England, county of Lincoln. A cross erected in this place is said to mark the grave of Ethelred, king of Mercia.

BARDSEY ISLAND (or BARDS' ISLAND, so called from having been the last place of refuge of the Welsh bards), a small island of north Wales, county of Caernarvon, in the Irish sea, near the north point of Candgair bay; area, 870 acres, nearly a third of which is mountain. It is a resort of egg hunters, and is only accessible on the S. E. side, where there is a sheltered an-

chorage. The island is the property of Lord Newborough.

BARDSTOWN, or BAIRDSTOWN, a flourishing town of Nelson co., Kentucky, pleasantly situated on an elevated plain near the Beech fork of Salt river. It is the seat of St. Joseph's college, a prosperous Roman Catholic institution, under the charge of the Jesuits, incorporated in 1824, and numbering, in 1856, about 240 students, of St. Thomas's (Roman Catholic) preparatory theological seminary, and of 8 academies. It contains several churches, 2 or 3 newspaper offices, and has factories of cotton, woollen, and other fabrics. Pop. about 2,000.

BARE POLES, in nautical language, the masts of a vessel at sea without any sails upon them. A ship is said to be under bare poles when the wind is so high that she dare not carry any sail.

BAREBONE, PRAISE GOD, a leather dealer of London in the time of Cromwell. He was a leading member of the parliament of 1653, which was, on that account, nicknamed Barebone's parliament. A violent partisan of the cause of the commonwealth, Barebone, when Gen. Monk came to London, marched, at the head of a large procession of the people of that city, and presented to parliament a remonstrance against the restoration of the king. In 1661 he was arrested and thrown into the Tower on a charge of being concerned in a plot against the government. He was afterward released, but his further history is unknown. It is said that 2 of his brothers assumed the names respectively of "Christ came into the World to Save Barebone," and "If Christ had not Died Thou hadst been Damned Barebone." The latter, it is added, was often designated, for the sake of brevity, by the 2 last words.

BAREFOOTED FRIARS. Going barefooted, was esteemed a sign of especial humility and penitence, and as such practised even by princes, before any religious order adopted it as a rule. The Franciscans were the first barefooted friars, having adopted the rule, as peculiarly suitable to their profession of extreme poverty. In process of time, the Franciscan family was subdivided into several distinct orders, some of which altered this rule, while others retained it. It was imitated by the order of discalceated friars of our blessed Lady of Grace, by the Carmelites, and other strict orders. Since the 16th century, even the discalceated orders have generally worn sandals of leather or wood.

BAREILY, the capital city of the district of Hindostan, of the same name, in the province of Delhi, is situated on a branch of the Ganges, in lat. 28° 23' N., and long. 79° 26' E., 118 miles N. E. from Agra. It was ceded to the British in 1801, and made the seat of a circuit court, including 9 other districts, and of a civil establishment. The company's officials live in a citadel outside the town. The inhabitants are engaged in the manufacture of swords, daggers, carpets, saddles, housings, embroidery,

jewelry, brass wares, and cabinet work. In the last two of these branches of manufacture, they particularly excel. The town, in 1853, contained about 111,000 inhabitants, two-thirds Hindoos, and the remainder Mohammedans.

BARENTIN, CHARLES LOUIS FRANÇOIS DE PAULE DE, a minister of Louis XVI., born in 1738, and died at Paris in 1819, who made himself extremely unpopular in the national assembly on occasion of his communicating the intention of the king in reference to the removal of the troops. He was so frightened by the denunciations of Mirabeau, who signalized him as the most dangerous adviser the king could have, that he tendered his resignation. He was arrested Nov. 18, 1789, as he was suspected of having made attempts to oppose the revolutionary movement in Paris. He was acquitted and released from prison after a short time. He left France, and remained abroad until the 18th Brumaire. After his return and under the restoration, he was in favor at court, and held several offices.

BARENTZ, WILLEM, a Dutch navigator of the 16th century, made 3 attempts, 1594, 1596, to go to China by the Arctic sea, and reached lat. 78°. An account of his voyage was written in Dutch, and has been translated into French, and published in the *Histoire générale des voyages*.

BARÈRE DE VIEUZAC, BÉTRAND, a notorious member of the French convention, born at Tarbes, Sept. 10, 1755, died Jan. 5, 1841. In 1789 he was elected a deputy to the states-general, and published a journal, *Le point du jour*, in which he gave an account of the proceedings of that assembly. A restless activity and proneness to side with the successful party, two characteristics of his whole life, were already perceptible in him. He indeed took part in nearly every debate, presenting motions, reading reports, making speeches, and always trying to make his words or his acts accord with the prevailing opinion. On the death of Mirabeau, it was he who proposed that the whole assembly should attend his funeral; and though far from being the most eloquent member, he was chosen to deliver the panegyric of the great orator. Notwithstanding all his efforts, he neither acquired influence among his colleagues, nor popularity out of the assembly. But he managed so skillfully that, on the adjournment, he was appointed one of the judges of the *tribunal de cassation* (court of appeals). A few months later he was elected to the convention. He showed himself the same bustling, talkative, versatile individual; but his age, past experience, fluency of speech, and readiness for every thing, made him sometimes a useful member, while, owing to his pliancy of character and cowardice, he became a tool in the hands of bolder men. Destitute of fixed principles and political faith, he more than once showed a striking inconsistency; but carefully watching the current of opinion, he was generally to be found among the most fervent

revolutionists. Thus he voted to lay on the table the charges brought against Robespierre by Barbaroux and Louvet, and contended that the awful massacre of September "was excusable in the eyes of a statesman." Being president of the convention during the trial of Louis XVI., he acted with unmitigated sternness toward the royal prisoner. He it was who, on some member's asking for a postponement, emphatically answered: "The tree of freedom cannot sprout, except when watered with the blood of kings." He of course voted for the immediate death of Louis. When elected a member of the committee of public safety, he at first managed to keep a position between the 2 parties of which it consisted; but, on the fall of the Girondists, he went, body and soul, to the terror-party, and became their mouth-piece. His skillful phraseology, which was remarkable for its florid elegance, was made use of to adorn reports upon the bloody measures recommended by the committee and ordered by the convention; and he was as justly as wittily called the *Anacron de la guillotine*. There is scarcely a revolutionary act in which he was not instrumental; he insisted upon the death of the unfortunate queen, Marie Antoinette, the execution of the Girondists, the confiscation of all property belonging to outlawed citizens, the formation of a revolutionary army, the declaration, that "Terror was the order of the day," the transportation of all who had not given evidence of their patriotism (*civisme*) previously to a certain day, and the like. But such unbounded zeal was not sufficient to protect him against suspicion. He was charged with *faucillanisme*, or wit being too moderate; and had it not been for the protection of Robespierre, who spoiled his defence, he would probably have been discarded. Such a service from the dictator could only be justified by an increase of devotion to the revolutionary cause; so he supported all the extreme measures, being peculiarly unrelenting in his efforts against those he called internal enemies, and going so far as to say: "If you spare them to-day, they will murder you to-morrow. No mercy, no! The dead alone do not return!" Barère's course, as has been justly said, made him the "Courtier of Terror." On the 8th Thermidor when victory was still undecided, he hesitated between Robespierre and his opponents, but in great perplexity to know who would conquer; so much so, that he demanded the printing of Robespierre's defence, and a few minutes afterward called for the cancelling of the previous resolution. When Robespierre had fallen, he seemed to breathe more freely; he fell upon him with a wrath equal to the shameful subservieny he had previously shown; he heaped ignominy on the memory of him whose most devout worshipper he had been saying, as an apology, that "Robespierre's most flagitious qualities had hitherto been veiled by the most profound secrecy," and the

"it was only a few days before his fall that the committee had been able to pierce the hypocrisy of the dictator." But all these excuses were of no avail; accusations against the discredited reporter of the committee followed each other; and at last, Dec. 26, 1794, the convention resolved, on the report of Merlin, that there was occasion for examining Barère's conduct. On March 2, 1795, the decree of arrest against him, Billaud Vareune, and Collet d'Herbois, was issued, and their trial was commenced on the 23d. The suburbs St. Antoine and St. Marceau had been in such a state of agitation, that, two days previous, the convention had proclaimed martial law; on April 1 (12th Germinal), an attempt to save the three was only suppressed by force; and they were sentenced to transportation. The formidable insurrection of the 1st Prairial now broke out, and came near effecting their liberation and the overthrow of the government. The latter, however, was still victorious; and out of the "three great criminals," as they were called, two were already on their way to Cayenne. Barère alone had not left France; and before he could be transported, he succeeded in escaping from prison. Although under the weight of his condemnation, he was elected in 1797 to the legislative council; but that body turned him out, and a new order of arrest was issued, but not executed, Barère being still fortunate enough to escape all search. After the 18th Brumaire, he obtained the cancelling of his proscription, and became secretly attached to the police. Fouché employed him in writing pamphlets, mostly against the English and in the interest of Bonaparte. The first consul himself made him the editor of the *Mémorial anti-Britannica*. The paper failed, but Barère had in the mean time become one of the writers for the *Moniteur*. However, he was never openly recognized by the government; and the department of Hautes Pyrénées having elected him to the legislative body, he was mercilessly rejected by the senate. He was scarcely considered good enough for the secret service. During the 100 days he was called to the house of deputies, and published the *Théorie de la constitution de la Grande Bretagne*, which produced a great impression, appearing just at the right time. On the second return of the Bourbons, he was banished as a regicide, and took refuge in Belgium, where he lived on a very moderate income and some literary earnings. After the revolution of 1830, he returned to France, and was in 1832 elected deputy, but on account of some informality, his election was declared void. He became a member of the general council of his department, and resigned only in 1840. The following year he died, 86 years old, respected by nobody, but invested with a sort of prestige by the remembrance of the great events he had seen, and the great men with whom he had associated. It would be easy to give a long list of the books he published; but nearly all

of them have lost their interest or are mere compilations. His *Mémoires*, written by himself, were published in 1834, with a notice by Carnot, the son of the member of the committee of public safety. These *Mémoires* were the occasion of a masterly essay by Macaulay, which should be read by whoever desires to thoroughly understand the man and the time.

BARETTI, JOSEPH, Italian author and traveller, born at Turin, March 22, 1716, died in London, May 5, 1789. At an early age his tastes were literary, and, after executing some translations in his native land, he went to London, in 1751, as a teacher of Italian. In 1753 he became intimate with Dr. Johnson. After he had published a *Catalogue raisonné* of Italian literature, he went abroad, in 1760, and Johnson declared of his book ("Travels through Spain, Portugal, and France"), that he did not know whether the world had ever seen such travels before, so well had he written. Several years elapsed before Baretti returned to England, in 1769, during which interval Johnson frequently wrote to him. This period was principally spent in Italy, which he was compelled to leave, having established at Venice a critical journal, called *Frustra letteraria* (the "Literary Scourge"), in which he ran into considerable personality. In October, 1769, he got involved in a street brawl in London, and drew his pen-knife in self-defence, when assailed by 8 men at once, giving one of them a stab, which proved fatal. He was tried for murder at the Old Bailey; made his own defence, called Burke, Johnson, Garrick, and Beauclerk to prove his inoffensive character, and was acquitted. After this, he was appointed foreign corresponding secretary to the royal academy. He subsequently published an account of the manners and customs of Italy, a dissertation, in French, exposing the blunders Voltaire had made in writing about Shakespeare, an Italian grammar, a Spanish-English and an Italian-English dictionary, the last of which continues in use at numerous schools in England and this country. Dr. Johnson (who said, "I know no man who carries his head higher for conversation than Baretti") procured him the situation of Italian teacher in Dr. Mede's family. In 1782 Baretti's salary, as secretary of the royal academy, was increased, so as with the profits from his books to give him a competency for the remaining years of his life.

BAREZZI, STEFANO, a painter in Milan, who has discovered a process for transferring frescoes from walls to wooden tables. He is still living.

BARFLEUR, an ancient seaport of France, 15 miles E. of Cherbourg, pop. 1,185. Its harbor, formerly one of the best in Normandy, is now choked with sand. William the Conqueror is said to have sailed hence to invade England.

BARFOD, PAUL FREDERICH, a Danish politician and historian, born in 1811, near Grønde, in Jutland. Professing in early life the strongest monarchical opinions, he changed at a

later period, and promulgated ideas the most democratic in a periodical entitled the *Brage og Idun*, in which he advocated the union of Norway, Sweden, and Denmark into one nation. Barfod wrote a "History of Denmark and Norway under Frederic III.," the "Jews in Denmark," and "Biography of the Ranzau family." He also cultivated poetry.

BARGAIN AND SALE, a contract in relation to real estate, which has introduced a form of conveyance now generally used in England and this country. By the ancient English law, there could be no transfer of lands without delivery of such, that is an actual delivery of possession by a prescribed formality. A sale of lands in any other mode did not change the title, but it was held that if a pecuniary consideration had been paid, a contract of sale would raise a use for the benefit of the vendee, or, in other words, that the effect would be that the vendor would hold the lands for the use of the vendee, and could be compelled to account for the profits. The statute 27 Henry VIII., called the statute of uses, annexed the possession to the use, or executed the use, as the lawyers expressed it, thereby making the party for whose use the lands were held, technically called the *cestui que use*, the complete owner of the lands. By the same statute it was required that a deed of bargain and sale should be enrolled in one of the courts of Westminster, or in the county where the lands lay, which furnished the suggestion of the practice now universal in this country of recording deeds. By a strict construction of the statute, it was held not to apply to copyhold estates, nor to leases for a term of years. It was also held that only one use could be executed, and therefore it was easy to evade the law if parties desired to do so, by introducing two or more uses. Thus, if land was conveyed to A, for the use of B, in trust for C, the first use was executed, but not the second. B became the owner of the land, and the trust in favor of C could be made effectual only through the aid of the court of chancery. This evasion was resorted to by religious houses who were disabled from taking conveyances directly, and by landed proprietors who desired to make dispositions of their estates which could not be done by will or other conveyances. The statute was thus virtually repealed in respect to the principal object had in view by the mere addition of half a dozen words, and the English spirit of reform has never been vigorous enough to counteract the narrow-mindedness of judges by further legislation, and the court of chancery to this day has sole jurisdiction of the interests denominated trusts. (See further *USES* and *TRUSTS*.) A very beneficial effect was, however, evidently wrought by the statute which probably was not had in view, viz., of introducing into common use the deed of bargain and sale, and this benefit would have been greatly increased but for another equally narrow construction by the judges limiting the operation of the statute to estates of freehold.

BARGARRAN, a village of Scotland, and the first place in that kingdom where fine thread was manufactured.

BARGE, a Sardinian town, in Piedmont, at the foot of Monte Monbracco, pop. 7,000. It has a college, a good trade, manufactories of fire-arms, and slate quarries. It suffered severely from an earthquake in 1808.

BARGES, JEAN JOSEPH LEANDRE, a French orientalist, born at Auriol, Feb. 27, 1810, was brought up for the church, but left it to devote himself to oriental studies. In 1837 he was appointed professor of Arabic at Marseilles, and in 1842 professor of Hebrew at the faculty of theology in Paris. He was in Algiers in 1839 and in 1846, for the purpose of historical research, especially in reference to eastern Algiers, and to the ancient city of Tlemcen. He is the author of memoirs on the Temple of Baal at Marseilles, on the African and Tlemcen church, and of various other writings.

BARGOOZEEN, or **BARGOUZIN**, a river of Siberia. It empties into Lake Baikal after a course of 200 miles.

BARGOOZEENSK, or **BARGOOZINSK**, a town and capital of a circle on the above river. Near it are thermal springs and baths.

BARHAM, RICHARD HARRIS, English humorist, born at Canterbury, Dec. 6, 1788, died in London, June 17, 1845. At the age of 16, at the death of his father, he succeeded to a moderate landed estate. Educated at St. Paul's school, London (at the same time with Sir Charles Clark, an eminent physician, Sir Frederic Pollock, chief baron of the exchequer, and Mr. Bentley, the publisher), he became an under graduate of Oxford at the age of 19. Here his companions were Cecil Tattersall, the friend of Shelley and Byron, Lord George Granville (afterward, as Lord Nugent, parliamentary politician, author, and lord commissioner of the Jewish islands), and Theodore Hook. After having studied law for a short time, he was ordained minister of the church of England, and got a curacy in Kent. In 1814 he married, and obtained a living in Kent. While confined with a broken leg, he wrote a novel called "Baldwin," described as "faulty perhaps in style, but by no means destitute of merit, as regards plot and delineation of character." In 1821 he was expectedly elected minor canon of St. Paul's cathedral, and removed to London. His leisure was there devoted to writing for Gorton's "Biographical Dictionary," with occasional contributions to "Blackwood's Magazine" and "Punch," and the journals. In 1824 he was appointed priest of the chapel royal, and presented to the united metropolitan livings of St. Mary Magdalene and St. Gregory by St. Paul. He devoted himself earnestly, ably, and faithfully to the performance of his pastoral duties, occasionally writing for "Blackwood," in which appeared his college-life story of "My Cousin Nicholas." He had renewed his acquaintance with Theodore Hook, and lived much in the particular "set" of that lively personage, and was very

intimate with Sydney Smith. In 1837, on the establishment of "Bentley's Miscellany," Mr. Barham contributed the "Ingoldsby Legends," a series of humorous stories, chiefly in verse—the facility and flow of which, with the felicity of its out-of-the-way rhymes, instantly won popular favor. Three volumes of these legends were finally collected, to the last of which was prefixed a life of "Thomas Ingoldsby," by the younger Mr. Barham. In 1840, Mr. Barham succeeded, for a year, to the presidency of Sion college. In 1842 he was promoted to the divinity readership of St. Paul's, and allowed to exchange his living for the more valuable one of St. Faith. In Oct., 1844, when Queen Victoria opened the royal exchange of London, Mr. Barham caught a severe cold, which, 8 months afterward, caused his death.

BARI, a fortified seaport of Naples on the Adriatic, capital of the province of Terra di Bari; pop. 27,297; lat. $41^{\circ} 7' 52''$ N., long. $16^{\circ} 53' 4''$ E. It is on the site of the ancient Barium. It has an active trade with Trieste and the Dalmatian coast, in corn, oil, wine, &c. It is environed by extensive olive and almond plantations. In the time of Charlemagne it was the principal stronghold of the Saracens on the Adriatic. In 870 it was taken by Louis II. after a siege of 4 years. In the 10th century it was held by the Greek emperors, who made it the seat of the governor of all the Greek possessions in Italy. In the 11th century it was taken by the Normans under Robert Guiscard. Queen Bona Sforza died here in 1557; a black marble sarcophagus supports an effigy of the queen in white marble, and commemorates her resting place. The remains of St. Nicholas, brought from Myra, in Lycia, were deposited here, in the Priory of San Nicola.

BARI, TERRA DI, a province of the kingdom of Naples, bounded N. by the Adriatic, E. and S. E. by the Terra d'Otranto, S. and S. W. by the province of Basilicata, and W. by that of Capitanata. Area, 2,358 sq. m.; pop. in 1850, 497,432. It is the most fertile province of the kingdom. Wheat is produced in great quantities; the other crops are olives, tobacco, cotton, flax, and various fruits. There are extensive fisheries and salt-works on the coast. The heat in summer is extreme, and causes a great deficiency of pure water. The principal trade of the province is with Naples, Venice, Trieste, and the coast of Dalmatia. The Terra di Bari formed the portion of ancient Apulia known as Apulia Pencetia. It was traversed by the famous Apian way.

BARLATINSKY, PRINCE, born about 1812, in Moscow, descended from an ancient and once sovereign family. After finishing his studies in the lyceum of Tsarskoe-Selo near St. Petersburg, he travelled in Europe, and resided several years in Vienna. Returning to Russia he entered the military service and became a lieutenant aide-de-camp of the emperor Nicholas. Handsome, of distinguished manners, and of a chivalrous character, he became intimate at

the court, and a favorite with the imperial family, and especially with the hereditary grand duke, now emperor of Russia. Soon, however, an unhappy passion for one above his position, obliged him to leave the court. About 1838 he entered the army of the Caucasus, and won there on various battle fields, the higher military ranks. His unsurpassed bravery, cheerfulness, care and good treatment of the rank and file, made him beloved by the army. He remained almost uninterruptedly for 20 years in the Caucasus, commanded with distinction in the last eastern war, and repressed the attempted invasion of Mingrelia by the Turks. He was raised to the dignity of an aide-de-camp general, or full general of infantry, and as the favorite and friend of the reigning emperor, the most brilliant career was opened to him at the court; but he preferred the command in the Caucasus, where he is now invested with almost unlimited power.

BARIGAZZO, a village of Italy, in the duchy of Modena. Near this place is witnessed the phenomenon of natural fire issuing from the soil, ascending several feet, and continuing for some days without intermission.

BARILE, a town of Naples. It was founded by a Greek colony of the lower empire, and as late as the 17th century, the rites of the Greek church were still practised here. Pop. 3,730.

BARILLA, crude carbonate of soda, also called soda-ash, from the method of its preparation. Formerly an important commercial article, largely manufactured on the eastern coast of Spain, and the shores of the upper Mediterranean. It is obtained from plants of the genus *salsola*. These are largely cultivated, cut and dried like hay, and then burned in holes in the ground. The crude soda runs out in a red-hot fluid state and collects in the bottom of the holes. The burning is continued by addition of fresh material, till the holes are filled with the alkali. They are then covered up and left to cool for a week or two. The product is a gray porous mass, containing from 16 to 80 per cent. of carbonate, but not averaging more than 20 per cent. The impurities are common salt, and sulphate of soda, lime, and alumina. Sulphur also is found in small quantity.—Kelp ash made from drift sea plants is a still more impure article than barilla; and the use of this has very much declined since the manufacture has been introduced of carbonate of soda direct from sea salt. The principal uses of barilla are to furnish the alkali required in the manufacture of glass and soap.

BARIMA, a river of British Guiana, which empties into the estuary of the Orinoco, just west of the headland of the same name, in lat. $8^{\circ} 46' N.$, long. $60^{\circ} W.$ Sixty miles above its mouth a natural canal 8 miles long connects it with the Waini, a stream navigable for 70 miles, having a depth of from 4 to 11 fathoms. The country bordering both streams is remarkably abundant in the valuable black mora timber,

and a great variety of other useful wood, as the bullet-tree, red-cedar, lancewood, silver balls, &c. Sir R. Schomburgk reports that nowhere in British Guiana are they seen of such gigantic size. Immense quantities of hematite iron ore are also stated in a late report (Dec. 5, 1857) of Messrs. Holmes and Campbell, to be found on their banks. These gentlemen ascended the Barima, and thence passed up the Waini, crossed over by land to the Cuyuni river, and thence to the gold diggings of Caratal near the Ekrekru range of mountains. Their report of the quality of the deposits and of the insalubrity of the climate, as published in the London "Daily News" of Jan. 2, 1858, is of a nature to discourage further researches.

BARING. **BARING BROTHERS** and Co., a celebrated Anglo-American mercantile and financial firm of London. **JOHN BARING**, son of a pastor of Bremen, settled in Exeter in the first part of the 18th century, where he conducted a successful trade. He had 4 sons, 2 of whom, John and Francis, established themselves in London.—**SIR FRANCIS BARING** was born April 18, 1740, died Sept. 12, 1810. He early attained a commercial position, and having been elected director of the East India company, became a zealous supporter of Mr. Pitt's policy, and was rewarded with a baronetcy, May 29, 1793. His "Observations on the establishment of the Bank of England," 1797, was of great weight in the question of renewing the charter of that institution. He left 5 sons, Thomas, Alexander, Henry, William, and George, and 5 daughters. Three of his sons, Thomas (afterward Sir Thomas Baring), Alexander (afterward Lord Ashburton, see **ALEXANDER BARING**, below), and Henry, had already been associated in the business, but Henry quitted it and accompanied Lord Macartney in his embassy to China, and afterward took the superintendence of the East India company's factory at Canton. He died April 13, 1848; his eldest son, **HENRY BINGHAM BARING**, born 1803, is a major in the British army, and has long been a member of the house of commons. The 2 younger sons of Sir Francis, William and George, also visited China, and Mr. George Baring subsequently entered the church of England, but left it to found a "free church," of which he built a chapel at Exeter.—**SIR THOMAS BARING**, eldest son of Sir Francis, born June 12, 1772, died April 8, 1848, sat from 1830 to 1832 in the house of commons. He was known to the public as a patron of art, and by his fine collection of pictures, which were dispersed at his death.—**SIR FRANCIS THORNHILL BARING**, eldest son of Sir Thomas Baring, born in 1790; graduated at Oxford in 1817; was called to the bar in 1823; entered parliament as member for Portsmouth in 1826; was a lord of the treasury from 1830 to June, 1834; a secretary of the treasury from June to Nov. 1834, and from April, 1835, to 1839; held the office of chancellor of the exchequer from 1839 to 1841; and was first lord of the admiralty from Jan. 1849, to the dissolution of the Russell ministry

in March, 1852. He is a whig in politics, is still member for Portsmouth, and has never taken part in the business affairs of the firm.—**CHARLES BARING**, another son of Sir Thomas, entered the church, and became bishop of Gloucester and Bristol in 1856.—The present partners of this mighty house are Francis Baring, M. P., born May 20, 1800, second son of the late Lord Ashburton and heir apparent of the title (Mr. Baring resides mostly in Paris, having married a daughter of the late duke of Bassano, and pays little attention to the affairs of the house); Joshua Bates, of Boston; Thomas Baring, M. P., born in 1800, second son of Sir Thomas Baring; Charles Baring Young; Russell Sturgis, of Boston; O. Edward Baring, son of Henry Baring; and Henry Bingham Mildmay, grandson of the late Lord Ashburton. The controlling partners are Mr. Bates and Mr. Thomas Baring. The latter has long been a most influential director of the bank of England, and has repeatedly declined the office of governor of that institution. The affairs of the house comprise ordinary mercantile business, monetary operations, and state loans. It has a branch house in Liverpool, with a local partner. Its only agent in the United States is Mr. Samuel G. Ward, of Boston.

BARING, ALEXANDER, Lord Ashburton, the second son of Sir Francis Baring (who was called by Lord Erskine "the first merchant in the world"), was born Oct. 27, 1774, died May 13, 1848. Being intended for mercantile pursuits, he was early placed in the counting-house of his father, and at a proper age was sent to Canada and the United States, to acquire, from personal observation, a knowledge of the commercial relations of Great Britain and America, and to enlarge the business connections of the house with this country. He was thus enabled to gain that information which proved of great value in building up and consolidating the fortunes of the house, as the trade of the United States expanded with the growth of the country; and which also prepared him to render a very important political service, toward the close of his career. When the governments of France and Great Britain commenced that system of retaliatory measures, known as the "Berlin and Milan decrees," and the "Orders in Council," sacrificing every principle of the public law to the vindictive desire of inflicting the greatest possible injury upon each other, Mr. Baring made his first appearance as a writer, in an able pamphlet, entitled "An Inquiry into the causes and consequences of the Orders in Council, and an Examination of the conduct of Great Britain toward the neutral commerce of America." This valuable tract appeared in 1808, and passed rapidly through several editions. It contained, among other instructive matters, an effectual exposure of the mischievous exaggerations of the once celebrated treatise entitled "War in Disguise," which exercised an injurious influence, in urging the English government upon a course of measures which ended in war. Mr. Baring's

pamphlet and a speech of Lord Brougham formed the text and furnished the material of a spirited article on the "Orders in Council," in the "Edinburgh Review," for April, 1808. It is melancholy to reflect that measures should have been persisted in by the government of Great Britain, till they drove the United States to a declaration of war, which are now admitted, by the highest legal authorities of England herself, to have been in violation, not only of the law of nations, but of her own municipal law. In 1810, by the death of his father, Mr. Baring became the head of the important house of which he was a partner, and which has stood for near a century among the most respectable in the commercial world. With the exception of a short period under Gen. Jackson and his successor, the house of the Barings have been the bankers of the government of the United States from the commencement. In that capacity, during the war of 1812, they continued to pay the interest on the public debt of this country owned in Great Britain, without remittances and without instructions. In 1812, Mr. Baring came into parliament and represented successively till 1831 the boroughs of Taunton, Callington, and Thetford. In 1822 he was elected a county member for North Essex. His early political associations were with the whig party; and the removal of the restrictions on trade, and questions of finance, received most of his attention as a public man. On subjects of this class his opinions—ever held and expressed with moderation—were regarded as an authority. In the great crisis of 1831, when the balance of political power in the kingdom was readjusted, Mr. Baring opposed the reform project of Lord Grey as dangerous to the stability of the country, following on this occasion, as afterward in reference to the repeal of the corn laws in 1846, the instincts of the landed proprietor rather than those of the enterprising merchant. This circumstance brought him into connection with the newly organized conservative party (so called at this time), and on the return of Sir Robert Peel to power in 1834, Mr. Baring became a member of the cabinet, as president of the board of trade and master of the mint. In April, 1835, he was raised to the peerage as Lord Ashburton. This title was chosen in consequence of a family connection, on the female side, with the celebrated lawyer, John Dunning, the first Lord Ashburton. In the house of peers, Lord Ashburton supported the measures of Sir Robert Peel till the year 1846, when, with many others of the conservative party, he separated himself from the premier, on the repeal of the corn laws;—a measure which he probably would have approved in earlier life, but which he now regarded as unjust to the landed interest. But the most important event in Lord Ashburton's political career was his appointment as special minister to the United States in 1842. When Sir Robert Peel returned for the last time to power in the

autumn of 1841, the relations of the two countries were in a most critical condition. Several subjects of controversy existed, one of them dating from the peace of 1783, which had exhausted the resources of diplomacy. The north-eastern boundary of the United States was the most important of these, as being most likely to lead to direct collision on the frontier; but the detention and seizure of American vessels by British cruisers on the coast of Africa, and the affair of the *Caroline* and *McLeod*, were scarcely less formidable. Had the diplomatic correspondence of the two governments continued in the train of rapidly increasing irritation, in which it was left by the Melbourne ministry in 1841,—Lord Palmerston being the foreign secretary and Mr. Stevenson the American minister,—a rupture could hardly have been avoided. One of the first measures of Sir Robert Peel and Lord Aberdeen, his foreign secretary, on coming into power, was to send Lord Ashburton as a special minister to the United States, with full powers to settle every question in controversy between the two countries. He was selected for this important mission on the avowed ground of his American connections and his known friendly feelings toward this country. He brought to his important duties a conciliatory temper, and was authorized by his instructions to come to any adjustment consistent with the honor of Great Britain. On this peaceful errand he embarked in a sailing vessel in mid-winter. He was met by President Tyler and Mr. Webster, then secretary of state, in the same friendly disposition. Commissioners were appointed, on the part of Massachusetts and Maine, to represent the interests of those states involved in the north-eastern boundary; and after a negotiation of a few months, the treaty of Aug. 9, 1842, was concluded, both parties, as is usual, and indeed necessary in such cases, relaxing somewhat of their extreme pretensions. The personal confidence of the respective negotiators in each other, and the private friendship existing between them, no doubt contributed materially to this result. The treaty was assailed by the opposition in England, led by Lord Palmerston, as the "Ashburton capitulation;" and, in the United States, Mr. Webster was charged with having been overreached by Lord Ashburton, and duped into the sacrifice of the rights of the country; but public opinion, on both sides of the water, has sanctioned it as a satisfactory adjustment of difficult matters of controversy, some of which had embarrassed the relations of the two countries for 60 years. The unprecedented compliment of a vote of thanks for a civil service was paid to Lord Ashburton, on the motion of Mr. Hume, in the house of commons, and of Lord Brougham in the house of lords; and an earldom was offered to Lord Ashburton, which he declined. Mr. Webster was rewarded by a charge equally unfounded and harassing, brought forward in the house

of representatives of the United States, of a fraudulent misapplication of the secret service fund.—Lord Ashburton was a friend and patron of the fine arts, and formed a most valuable gallery of the old masters. His personal character was in the highest degree exemplary and amiable. He possessed a more than ordinary degree of general culture, derived from reading, travel, and long intercourse with the most distinguished men of the day, at home and abroad. M. de Talleyrand, at one time, confided to him the care of his memoirs for safe keeping, and presented to him Canova's bust of Napoleon.—Lord Ashburton was eminently happy in his domestic relations. While in the United States, in his youth, he married the daughter of Mr. William Bingham, well remembered as one of the most distinguished merchants and citizens of this country, a senator of the United States from Pennsylvania. Lady Ashburton was a highly accomplished lady, of more than usual intellectual culture, and adorned her position in the highest social circles of Great Britain. Lord Ashburton died at Longleat, the seat of his grandson, the marquis of Bath, and was followed to the tomb by Lady Ashburton, in December of the same year. He was succeeded in his title and estate by his son, William Bingham, the present Lord Ashburton, who was born in Philadelphia in 1799, a nobleman of the most estimable character and liberal principles, who has greatly interested himself in the subject of social reform, and the improvement of the condition of the masses.

BARITON (Italian, *baritono*), a term used to denote a man's voice, about midway between the base and tenor. It is sometimes called a high base or a low tenor, as it approaches one or the other of these voices, but its compass usually extends from B flat to F. Its position corresponds with that of the *mezzo soprano* in the female voice.

BARITU, GEORGE, one of the most learned Wallachian scholars of the present day, born June 4, 1812, at Alt Zsuck, in Transylvania. He is the son of a clergyman of the Greek Catholic church, studied philosophy at Klausenberg and theology at Balasfalva, and officiated for one year as teacher at the seminary of the latter town. In 1836 he organized a primary school for the benefit of the Roumanian religious community at Kronstadt, and remained connected with it till 1845, when he devoted himself exclusively to the conduct of the "Transylvania Gazette," which he had founded in 1838. This paper and the literary supplement which was connected with it, was the first journal ever published in the Roumanian language. Baritu's chief aim was to paralyze Russian influence by bringing Wallachia back to the use of its own national language. In the political excitement of 1848 and 1849 he upheld the cause of Austria. Since 1850 he has become the chief of a manufacturing establishment at Kronstadt, the head of the Levantine trading company and of a newly established

publishing house in that town. He is the author of several literary productions, including a German-Roumanian dictionary, published in 1853.

BARIUM, the metallic base of baryta, first obtained by Sir H. Davy in 1807, and again, alloyed with iron, in 1808. It has much the appearance of silver; fuses before it becomes red hot, is malleable to some extent and ductile. Its specific gravity is supposed to be about 4. Exposed to the air and moderately heated, it combines with oxygen and burns with a deep red light. Its compounds with oxygen are 2—the protoxide, or barytes, or baryta, and the peroxide, an artificial preparation. Barium is obtained by reducing its salts, either by the compound blow-pipe, the galvanic battery, or by passing the vapor of potassium over them when heated red hot. It readily decomposes water, and is converted into baryta in this fluid, or in the air. No use has ever been made of the metal. Its combination with bromine, iodine, or chlorine, is of useful application in medicine. These compounds are powerful poisons, producing rapid coagulation of the blood, when injected into the veins, or applied externally; taken internally they produce a slackening of the circulation and a diminution of sensibility. The chloride is nevertheless a valuable medicine in scrofulous affections, glandular swellings, &c. In case of poisoning by any of the barytic compounds, an alkaline or earthy sulphate should be immediately administered, as the sulphate of soda, or magnesia—the object being to form the insoluble sulphate of baryta.—The chloride of barium is an artificial preparation from the native carbonate, or the sulphate of barytes, used as a chemical test, and also in medicine as a remedy in scrofulous complaints. It crystallizes in white, transparent rhombic prisms, of specific gravity 2.8, which are easily soluble in water. In chemical analysis, chloride of barium is used as a test of the presence of sulphuric acid. In contact with the sulphates mutual decomposition takes place with the formation of the insoluble sulphate of barytes.—The soluble sulphates, as those of magnesia or soda (Glauber or Epsom salts), therefore suggest themselves as the most proper antidotes for this poisonous preparation, when taken in large doses.

BARJOLS, a manufacturing town in France, in the department of Var, near Brignolles, and 518 miles S. S. E. from Paris; population 3,161. In subterranean caverns in this place, especially in a former chapel of the barefooted Carmelites, there are found some very curious stalactites. There is also a silver mine in the vicinity. During mediæval times Barjols was frequently transferred from one church or bishopric to another. More lately it contained with other relics the body of St. Marcel, which it was one of the first acts of the Calvinists to burn when they took the town in 1562. Still more lately a convent of Augustinian monks and a nunnery of Ursulines have been among its principal institutions.

BARK. This is to the tree what the skin is to the animal body, its outer covering and protection. It is also the channel through which the sap descends from the leaves. The true bark, which separates from the wood, is only found in the exogenous and gymnospermous classes of plants. Its construction is of cellular tissue, traversed longitudinally by woody tissue, which is composed of woody tubes, through which the sap elaborated in the leaves descends. It is also connected through channels, called medullary processes, with the woody portion of the tree, which receives through these the secretions that add to its growth, and which are deposited around its external part, just beneath the bark. The bark itself receives its annual layers of growth on its inner surface next the wood. This portion being called *liber*, the name was subsequently applied to the book, which was written on its leaves or plates. The external portion of the bark becomes like a dead scurf, and is continually shed as it is renewed from within. The common cork is this dead portion of the bark of the *quercus suber*. In some species of trees, particularly those exposed to severe northern climates, the bark, like the coating of the wild animals, is of great thickness and warmth. Thus in some varieties of the pine it has been found over a foot thick, and in other trees, as the birch, it contains between its layers air cells, which serve by the non-conducting property of air to promote the warmth of the wood. When the bark of a tree is cut across to the wood, the sap is arrested in its descent, and is seen oozing out in drops from the upper side of the cut, the lower side remaining dry. If this circulation should be entirely cut off, the plant must die. The resins and gums are thus collected, and the sweet sap of the maple and other trees. The bark, retaining a considerable portion of the secretions of the descending sap, generally stores up more than any other part of the plant, its peculiar chemical properties, and hence we find it containing those essences that give to vegetable products their value for medicinal and other uses. The bark of the cinchona is the repository of the vegetable extract, quinine (see CINCHONA); that of the oak and hemlock (*abies Canadensis*), of the tannin, which makes them valuable to the tanner; and it is the bark of the cinnamon in which we find the peculiar agreeable essence of this plant. The fibres of the bark are often so strong and flexible, that they are used for ropes and cords. On such materials were suspended the bridges of the ancient Peruvians; and among half civilized people in most parts of the world some tough flexible barks may almost always be found supplying the place of hempen cordage. In our own country, the leather-wood, *Dirca palustris*, is used for this purpose, as also the inner bark of the white cedar. In the West India islands a remarkably tough bark, called in Spanish *mihagua*, is in very general use for a great variety of purposes, often supplying the place of nails as well as of ropes.

BARKAL, or **JEBEL BARKAL**, an isolated sandstone rock, 400 feet high, in Nubia, near the Nile, lat. 18° 31' N., long. 31° 46' E. It is nearly perpendicular on all sides, but fully so on the side nearest the Nile. There are some remarkable ruins in the vicinity.

BARKEHDIEH, a populous village on the Senegal, western Africa. It is the residence of the chief of a warlike and agricultural tribe called Daliankes.

BARKER, **EDMUND HENRY**, an English Greek scholar, born at Hollym, Yorkshire, Dec. 1788, died in London, March 21, 1889. He resided for some time at Hatton, near Warwick, where he was permitted to use Dr. Parr's valuable library. While there he undertook the labor of reprinting the *Thesaurus Græcus* of H. Stephens, upon which was expended an immense amount of time and money. Owing to severe adverse criticisms, the work did not appear in the form which was originally intended, or under Mr. Barker's name. His first work, "Classical Recreations," appeared in London, 1812; one volume only was published. He also wrote several dissertations, essays, &c., for reviews; a work upon the claims of Sir Philip Francis to the authorship of the Junius letters; a Greek and English dictionary, &c. In the latter part of his life, Mr. Barker having dissipated all his property in disputing a will, became so reduced that he was at one time confined in prison, and finally died in an obscure lodging-house in extreme want.

BARKER, **HENRY ASTON**, an English painter, son of Robert Barker, born at Glasgow in 1774, died at Bitton, near Bristol, July 19, 1866. He was a pupil of the royal academy, London, and among his estimable associates there was J. W. M. Turner, the celebrated landscape painter. Barker undertook the management of the Leicester square panoramas, which had been established by his father, and in 1816, became the owner of another panorama in the Strand, which he purchased in conjunction with Mr. John Burford. Many of the principal events in connection with the wars of Napoleon, Nelson, &c., were skilfully used by Barker for his panoramic purposes. The pecuniary success which he achieved by the exhibition of a panorama of the battle of Waterloo, enabled him to retire from active business, in 1826.

BARKER, **JACOB**, an American financier, born at Swan Island, Kennebec county, Maine, Dec. 7, 1779. By the mother's side he is descended from the same stock as Dr. Franklin, with whom he is proud to claim a certain family resemblance. She was of a Quaker family of Nantucket, and young Jacob was brought up in that communion, to which, and to their unpretending costume, he long adhered. At 16 he was adrift in the world and came to New York, where he got employment with Isaac Hicks, a commission merchant, and beginning to trade on his own account, in a small way, before his majority was in possession of 4 ships and a brig, and had his notes regularly discounted at the

United States bank. Sitting at his wedding dinner, Aug. 27, 1801 (he married Elizabeth, daughter of Thomas Hazard, of New York), with Mr. Henry Dewees, for whom he had heavily indorsed, news was brought him of the ruin of them both; he passed the letter over to Mr. D., drank wine with him, and took no further notice of the matter. Not long afterward he entered into a contract with the government for the supply of oil, and being in a large shipping business, received the consignment of the first steam engine used on the North river. The war coming on, he took the democratic side in politics; engaged himself to raise a loan of \$5,000,000 for the government; was one of the building committee of Tammany hall, and took part in the first meeting held in it. His ships were lost during the war, but pursuing his political fortunes he became senator of the state of New York, and when sitting in the court of errors he delivered an opinion in opposition to that of Chancellor Kent, in an insurance case. The chancellor contended that if the master intended to deviate from the voyage as stated in the policy, the insurance was forfeited; and Mr. Barker that forfeiture should only follow upon actual deviation. They are the only opinions reported, but the court sustained Mr. Barker. He set up the "Union" newspaper to advocate the election of Gov. Clinton. His financial dealings with the government led him to meditate deeply upon the mysteries of credit, and in 1815, still keeping up an immense outside business, he established the Exchange bank in Wall street, and commenced his career as a speculator in stocks, the true field for a financier, aspiring to be the chief regulator and principal channel of the money transactions of the country. The laws and circumstances of the times were favorable to a bold operator; he came nearer realizing that ambition than has ever happened to any individual depending on his own resources. The Exchange bank, however, broke in 1819, but he made use of many other institutions chartered in different states, and for many years, by the immense extent of his operations, was thought to have the control of great capital. For some transactions concerning the North River bank, he was openly insulted by one David Rogers, to whom he sent a note demanding an explanation. No explanation came, but in place of it an indictment by the grand jury for sending a challenge. Mr. Barker defended himself with infinite subtlety on the trial, denying the fact of the challenge, but the jury would not be persuaded, nor the judges afterward, when he argued the question of law, and he was sentenced to be disfranchised of political rights—from which sentence he was relieved by Gov. Clinton. But at length, on the failure of the life and fire insurance company, he was indicted, with others, for conspiracy to defraud. The trial was long, the counsel wanted time to look over their notes, and it was suggested that Mr. Barker should begin his defence. He had no brief and had taken no

notes, but professed his readiness. "Yes," said Mr. Emmet, "if they were all to be hanged, Mr. Barker would say, hang me first." His defence is a prodigy of ability. At the first trial the jury disagreed, on the second he was convicted, but a new trial granted. After the third the indictment was quashed. Notwithstanding his just confidence in his own powers, he gradually withdrew from personal efforts, and left his defence to his counsel, the trained gladiators in the legal arena. These, and many other suits to which they led, could not but ruin his business and destroy public confidence in his operations. He retorted by accusations of conspiracy; but the difficulty was that it was a conspiracy of some of the most influential inhabitants of the city. In 1834 he removed to New Orleans, where he set himself to study law and was admitted to practise in the courts, after being unsuccessful on his first examination. Here he took such a part in politics, business, and other movements of society, as is generally accorded to a restless and powerful nature. Countless stories are told of his ingenuity and self-possession. Among the class to which he belonged, and which always has its representatives in a commercial community, he never had his equal in America. He had boundless assurance, perfect possession of his faculties, the power to perform an immense amount of intellectual labor, and the Cæsar-like ability of doing many important things at the same time.

BARKER, ROBERT, an Irish painter, born at Kells, in 1789, died April 8, 1806. He was the inventor and patentee of the style of painting now known as panorama. These were painted in distemper upon the walls of a circular room. He gained a fortune from them.

BARKER, THOMAS, an English painter, born in 1769, near Pontypool, in Monmouthshire, and died at Bath, Dec. 11, 1847. He was aided by a rich citizen of Bath, who gave him the means of cultivating his talents, sending him to Rome at the age of 21. Among his more popular pictures were the "Woodman," the "Gypsy," and others; these were copied extensively by artisans in various parts of the country, and soon made their appearance upon specimens of pottery, cotton cloth, china, &c. As Mr. Barker never claimed any thing for copyright he became very popular among manufacturers. He was connected with the British institution nearly 60 years, during which time he furnished more than 100 pictures upon various subjects. His principal work is a fresco 30 feet long, 12 feet high, on the wall of his residence at Lion Hill, Bath, "The Inroad of the Turks upon Scio, in April, 1822."

BARKHAM, JOHN, an English antiquary, born 1572, died 1642. He is said to have been the real author of the "Display of Heraldry," published under the name of Gwillim, referred to more than once in "Rob Roy," as a hand-book in the houses of the gentry, a century ago, and for a long time considered indispensable to

every person who claimed the right to display armorial bearings.

BARKING, a market town and parish of England, county of Essex, 7 miles E. N. E. of London; pop. of town, 4,980; of the parish, 9,888. Barking abbey, once believed to have been the oldest and richest nunnery in England, was founded in the year 677. In 870 it was burnt to the ground, and the nuns killed and dispersed by the Danes. In the middle of the 10th century it was rebuilt and restored by King Edgar. Several of the queens of England, and other noble ladies, assumed the office of abbesses of this convent. The abbess of Barking was one of the 4 persons who were baronesses by right of their station; and though her sex prevented her from sitting in parliament or attending the king in war, she always furnished a quota of men, and lived in grand state. In 1628 the abbey estate was sold by Charles I. to Sir Thomas Vanshaw, but now scarcely a vestige of the buildings remain.

BARKWAY, a village in Hertfordshire, England, 84 miles north of London; pop. 1,840. It consists principally of one long street, and its chief object of interest is its church, a handsome structure containing some interesting old monuments. This town is older than the conquest, and with its neighboring lands was divided by William among 4 great lords. In 1592 a conflagration almost entirely destroyed it.

BARLAAM, a Greek theologian, born at Seminaria, in Calabria, died about 1348. He was a monk of St. Basil, and noted for his learning, and particularly for his thorough knowledge of the Greek language. In 1327 he visited Constantinople, and in 1381 he was appointed abbot of the convent of St. Salvator, which position he soon lost by his pedantic and supercilious behavior. In 1389 the kings of France and Sicily sent Barlaam in vain to Pope Benedict XII. at Avignon, for the purpose of obtaining assistance against the Mohammedans, and of arranging a union between the Greek and Latin churches. Henceforth he was engaged in various religious controversies, and was defeated in them all. He finally went over to the Roman church, and through the influence of his friend Petrarch received from Pope Clement VI. the bishopric of Geraci. His numerous writings are forgotten.

BARLÆUS, GASPARE. See **BAERLE**.

BARLETTA, a fortified town in the Neapolitan province of Terra di Bari, on the Adriatic coast, in lat. 41° 20' N., long. 16° 18' E.; pop. 19,929. It has a light-house and an anchorage for small vessels. The streets of the town are wide, and well paved; the houses of stone, and lofty. A colossal bronze statue of the emperor Heraclius, is the principal monument in the town. Ferdinand I. of Aragon, was crowned in the cathedral, which is a Gothic building. At the siege of Barletta by the French, under the Duke de Nemours, the famous battle, in pursuance of a challenge, was fought Feb. 16, 1503, between 11 French and 11 Spanish cavaliers.

The chief of the former was the illustrious Bayard, and the chief of the latter, Prospero Colonna. At the first collision 7 of the French knights were unhorsed, but Bayard and his 8 remaining comrades fought with such desperate skill that the tournament ended a drawn battle.

BARLETTA, GABRIELLO, an Italian preacher, born at Barletta, in the kingdom of Naples, lived in the 2d half of the 15th century. He belonged to the order of St. Dominic, and rendered himself famous both by his eloquence and eccentricity. He had a habit of inserting parentheses between the clauses of the prayers, and other parts of the service, in which he made practical comments and sharp personal illustrations, in order to add to the force of the liturgy. Though his style of preaching had not the merit of being in good taste, it was yet very effective, and the esteem in which he was held was expressed by the proverb, *nescit predicare, qui nescit barlettare*. A collection of his sermons passed through about 20 editions.

BARLEY (*hordeum*), a very valuable grain, more widely distributed and generally used than any other, and from the most remote times an important article of the food of man. Pliny speaks of it as the first grain cultivated for nourishment. It is adapted to hot and cold climates, in the former being obtained in 2 successive crops in a season. Where it originated is not known, but the plant grows wild in Sicily and the interior of Asia, and the common species is stated by Purnah to occur apparently in a wild state in some parts of the United States. The barley cultivated in this country is of 2 species, the *H. vulgare*, and the *H. distichon*, the grains in the former being arranged in 4 rows, and in the latter in 2. Beside these a third species is cultivated in Europe, called the *H. hexastichon*, also called the autumn and winter barley. This has 6 rows of grains, each row terminating in a long beard. This is always sown in the fall, and ripens the first in the summer. Its grains are small, but the yield is large—sometimes 20 for 1. The Scotch bere or bigg is of this species. The *H. distichon*, or English barley, was originally from Tartary. It has the grain naked of any beard. It is more productive than the other kinds, and succeeds in almost all soils. The grain is excellent feed for cattle and all barn-yard stock. The most usual crop in Great Britain is from 28 to 40 bushels to the acre, the weight of the bushel being from 50 to 54 lbs., according to the quality of the grain. Barley hulled and ground makes a coarse, heavy kind of bread, and is very extensively employed in the manufacture of beer, and, to some extent, for medicinal purposes. Barley corns are of an oval, elongated shape, pointed at one end and obtuse at the other, and marked with a longitudinal furrow. Their color externally is yellowish, but within they are white. Stripped of their outer covering or husk, and rounded and polished in a mill, the grains are

pearly white, and are then known as pearl barley. This is the form in which they are always kept by druggists. Barley flour analyzed by Einhof was found to contain, in 1,000 parts, starch, 720; sugar, 56; mucilage, 50; gluten, 86.6; vegetable albumen, 12.8; water, 100; phosphate of lime, 2.5; and fibrous or woody matter, 68 parts. The quality of the grain is judged of by the quantity of water it absorbs when steeped in it. One hundred pounds of good barley gain by absorption 47 pounds of water.—From the times of Hippocrates and Galen, barley drinks have been in high repute in febrile and inflammatory complaints. They possess mild, soothing qualities, while at the same time they impart nourishment.

BARLOW, CHARLES ANSTUTHER, an officer in the British navy, born Feb. 5, 1800, died in London, Dec. 31, 1855. During 22 years of active service he was present at many memorable engagements, as, for instance, the battle of Algiers, the siege of Bilbao, and at the capture of Canton in 1841, where he took a very prominent part. In 1841 he was advanced to post rank, and made a K. O. B.

BARLOW, FRANÇOIS, an English painter, distinguished for his skill in representing birds, animals, and fishes, was born in Lincolnshire about 1626, died in 1702. He was an admirable draughtsman, but a poor colorist. He also engraved, and prepared plates from some of his own works. He died in great poverty.

BARLOW, JOSE, an American poet and politician, born at Reading, in Connecticut, in 1755, died near Cracow, in Poland, Dec. 22, 1812. He was educated at Dartmouth and Yale colleges, and during his latter vacations took part in the opening scenes of the revolution, fighting valiantly, it is said, in the battle at White Plains. He graduated in 1778, his part being a poem upon the prospect of peace, which, with another poem delivered on occasion of taking his master's degree, was published in the Litchfield collection of American poems. He began the study of law upon leaving college, but the army being at that time deficient in chaplains, he yielded to the solicitations of his friends and began the study of theology, and in 6 weeks presented himself for examination, was duly licensed a Congregational minister, and immediately joined the army. Here he became again associated with Dwight, whose acquaintance he had made in college, and the 2 poets and chaplains labored together throughout the war in animating and encouraging the soldiers by patriotic odes and addresses. Barlow was at the same time meditating and composing a poem entitled the "Vision of Columbus," the germ of his greatest work, the "Columbiad." At the close of the war he left the ministry, resumed the study of law, and settled in Hartford, where he established a weekly newspaper, and prosecuted his poetical designs. At this period he engaged in adapting Watts's versions of the psalms of David to the use of the general association of

Connecticut, and he added to the collection several original hymns. The "Vision of Columbus" was published by subscription in 1787, and was received with flattering favor by his numerous friends of the army, clergy, and people, and was reprinted in London and in Paris. In advance of the French revolution, Barlow exhibited in his poems much of that unscrupulous philanthropy and enthusiasm for liberty which soon fascinated and shattered France, and in 1788 he obtained an opportunity to visit the old world. As little inclined to the practice of law as of divinity, he went to England as agent of a land company, but learning that he had become associated with a party of swindlers, he resigned his office, repaired to Paris, and involved himself in the political schemes of the Girondists. In 1791 he published in London the first part of his "Advice to the Privileged Orders," a vehement production, which was soon followed by a poem upon the "Conspiracy of Kings." The poem was suggested by the first continental alliance against France, and was introduced by a prose preface most violently denouncing Mr. Burke as the author of the calamities of the time. He published a translation of Volney's "Ruins, or Reflections on the Revolutions of Empires," and in 1792 sent a letter to the national convention of France, in which he recommended an extremely popular government. He became associated with the constitutional reformers of England, and was at the same time one of a commission sent by France to organize the newly acquired territory of Savoy. At Chambery he wrote an enthusiastic address to the people of Piedmont to adopt the revolutionary principles of France, and there he wrote his humorous and most popular poem upon "Hasty Pudding." He made a fortune in France by commercial speculations, and after addressing two extravagant political letters to the people of the United States, he returned in 1805 to his native country, and established himself in Washington. In 1806 he propounded a scheme for a national academy under the patronage of government, and the next year his "Columbiad," the fruit of the labor of half his life, appeared in a style which made it the most costly publication that had yet been attempted in America, being illustrated by engravings executed by the best artists of London. A more elaborate and declamatory poem than the "Vision of Columbus," it yet never attained the popularity of the latter. In its design it was simply a historical view of events from the time of Columbus to the scenes of the revolution, the great discoverer being represented as seeing them from his prison in Spain. In its latter years he was collecting materials for the history of the United States, and was appointed by President Monroe minister to France. His diplomatic skill was there in request, and Napoleon, perplexed by negotiations at the time of his Russian campaign, sent for him to meet him at Wilna. Barlow set off immediately

but died at a Jewish cottage in Poland, before accomplishing his mission. His last poem, dictated from his bed, was a withering expression of resentment against Napoleon for the hopes which he had disappointed.

BARLOW, PETER, an English mathematician, born in 1785, received the Copley medal in 1835, and was elected a member of the institute of France. He discovered a mode of obviating the effect of iron bands upon the magnetic needle. He also made an improvement in achromatic telescopes, and constructed the largest then known in England, the opening being 8 inches in diameter. He has also paid considerable attention to the construction of railroads.

BARLOW, THOMAS, an English divine and bishop, was born in 1607, and died at Bugden, Oct. 8, 1691. In 1635 he was appointed reader of metaphysics to the university of Oxford, and in 1657 was chosen provost of Queen's college. On the restoration of Charles II., he was one of the commissioners appointed to restore members of the university unjustly expelled in 1648. He became bishop of Lincoln in 1675. After the so-called popish plot, he published several tracts against the Catholics, but on the accession of James II., he veered toward Rome. In 1688, he readily voted that the throne was vacant, and was most zealous in excluding from their benefices the nonjuring clergy.

BARLOWE, WILLIAM, an English theologian, born near the beginning of the 16th century, died in August, 1568. Before the reformation he belonged to the order of St. Augustine, received the degree of doctor of theology at Oxford, was elected prior of the house at Bisham, in Berks, and in 1535, was sent by Henry VIII. on an embassy to Scotland. He secured the favor of the king by abstaining from all opposition to the suppression of the monasteries, and by advising his associates to do the same; and he was rapidly promoted, being appointed to the bishopric of St. Asaph in 1535, to that of St. Davids in 1537, and to that of Bath and Wells in 1547. At this time he formally left the Roman Catholic church, and married; and was distinguished for his Protestant zeal during the reign of Edward VI. Under Mary he lost his bishopric, and for a time his liberty, and retired to Germany till the accession of Elizabeth. In 1559 he was made bishop of Chichester, and continued in this see till his death. He left a work entitled "Cosmography," and several slight controversial treatises, now of little value. He had a numerous family, and it is recorded that his five daughters all became the wives of bishops.

BARLOWE, WILLIAM, an eminent mathematician and divine, and the first writer on the properties of the magnet, was the son of the bishop of Chichester. After taking the degree of A. M. at Oxford, he went to sea, where he acquired some knowledge of navigation. Having entered the church, in 1578 he became prebendary of Winchester, and, in 1614, archdeacon of Salisbury. He died May 25, 1625.

BARMECIDES (children of Barmek), a celebrated family of Khorassan, attached to the Abbasside caliphs. One of them, Khaled ben Barmek, was tutor of Haroun al Rashid. His son, Yahia, became the vizier of Haroun in 786, and contributed greatly to the renown of his master's reign. He had two sons, Fadhl, who was distinguished as a soldier and as minister of justice, and Giaffar, who figures in the Arabian Nights as the friend and confidant of Haroun. At the same time some 25 members of the family held important civil and military dignities. The downfall of the Barmecides took place in 803. Giaffar was beheaded at the age of 37, at Anbar, on the Euphrates; Yahia and Fadhl were thrown into prison at Raqqa, where they died in chains, while nearly all their relatives were arrested and deprived of their property. The reason for this severity on the part of Haroun was jealousy of the immense popularity and power of the Barmecides; and its occasion has been found in the birth of a son to his sister Abassa, whom he had married to Giaffar, on condition that the union should remain purely Platonic. Ibn Khaldoun, the historian, disputes the truth of this story, which in modern times has afforded a theme to poets and dramatists. To one of the Barmecides is attributed the famous feast in the Arabian Nights, where the guests were served with only imaginary viands.

BARMEN, a long and beautiful valley on the Wipper, in Rhenish Prussia, occupied by 7 villages, which produce the effect of a continuous town, and are included in one parish. Here is the most important ribbon manufacture in Europe. Cottons, velvets, silks, chemical products, plated-ware, &c., are also produced. There is a high-school and deaf and dumb asylum. Pop. at the end of 1855, 41,442.

BARN (Saxon, *berern*, from *bere*, barley, and *ern*, a close place or repository). The word seems to have had its origin in the use of a building for storing grain. With us it has a wider signification—all structures of any capacity used on a farm for storing crops and sheltering stock being known as barns. In the changeable climate of the United States, with its severe winters, protection to cattle becomes an important item in the operations of husbandry, and as our agriculture becomes more highly developed we construct more expensive, convenient, and useful barns. A well-built barn, embracing all the conveniences needed for the easy and safe storing of crops, and the comfort and well-being of farm stock, will always be one of the safest and best investments a farmer can make. Barns were scarcely known in many portions of England 150 years ago, and cattle were seldom housed. In our days the best barns are to be seen in Northumberland and the Lothians. Many of them are built of stone, roofed with tile or slate from Welsh or Northumberland quarries, floored with slate and provided with admirable appointments. At one time the barns on many estates were capacious enough to con-

tain all the grain raised on them, but more recently the practice of stacking grain has gained ground, and it is now considered the better plan,—building the grain barn of sufficient size to contain one or two ricks of grain at a time, and all the necessary appurtenances for threshing. The stacked grain is kept in better condition from having a freer circulation of air, and being so disposed as to be free from the attacks of vermin. A regular yard is set apart for stacks, elevated platforms are provided on which the stacks are built, and they are so arranged as to prevent vermin from climbing to them from the ground, and so far separated as to leave each stack isolated. On some farms, the stacks are built on iron platforms, standing on trucks, which roll over a railway to the barn when the grain is required for threshing. The kind of barn known as the "barrack," is often used on English farms for the storing of hay and grain. Four high posts are set in the ground to a depth sufficient to render them firm. A roof is constructed which slides up and down on these posts, and which is fixed wherever required by iron pins, which are passed through the upright posts. After the material is all stored, the roof is lowered down so as to form a complete cap to the contents of the barrack. In many instances stables are constructed at slight cost in the lower portion of the barrack. Many such conveniences are known to the American farmer. The skeleton barn, a building but partially enclosed, spaces being left between the boards for the free ingress of air, with a durable roof and projecting eaves, is most used for grain, and for the storing of hay loosely trussed for market. The sheep and stock barns on the continent of Europe are generally of an inferior character, and usually serve also as a residence for the family of the servant or foreman of the farm. The sheep and stock barns of the United States are generally commodious structures, with wide sheds on each side, in which the animals find shelter and receive their provender, or, when built on a side hill, the cellar is appropriated to this purpose. Sheds also surround the whole yard in many instances, while stacks of the poorer quality of hay and threshed straw occupy the centre of the yard, their contents being freely used as bedding and partial food for cattle, the greater bulk finding its way into the manure heap. These are both comfortable quarters for the animals, and profitable for the farmer. Modifications of this general plan are made by each farmer according to his means and peculiar ideas. As a general rule, stock barns are found most profitable when they afford the most ample accommodations. The greater the comfort of his animals, the more uniform the profit of the farmer. In the older northern states of the Union the greater number of barns are of small size, and possessing but few conveniences—oftentimes mere sheds, or hovels. The Shakers are noted for the care they bestow on their farm products and their stock. They expend large

sums in erecting barns. One at New Lebanon, N. Y., built of stone, cost \$32,000, and presents no extravagant features. It is so arranged as to receive loads of hay and grain on the upper floors, which are discharged to a lower level, where they are fed to cattle, or if required to be removed, are thrown down to the ground or on wagons below. It is built on a side hill, and much labor is saved in the storing and removing of crops by this double approach. This barn affords shelter to stock and crops, which would, with other arrangements, have required several smaller structures, and the Shakers believe that they store crops and feed stock more economically on this large scale. Mr. David Leavitt's barn at Great Barrington, Mass., is fitted up in the most expensive style. It spans a ravine through which passes a stream, which drives a 20 horse-power wheel for sawing wood and timber, grinding, turning lathes, and performing other operations. There are rooms for the foreman, and lodgings for laborers, milk-dairy, cattle-stables, vinegar-cellar, root-cellar, and many other conveniences under the same roof. It is true this structure is expensive, and in many places cannot be copied, from the want of the natural advantages found on Mr. Leavitt's site, but there are numerous conveniences which should find their way into every well-ordered stock-barn. Great care should be used in the selection of a place for the farm buildings. The barns should be easily reached, and so arranged as to admit of the economical disposition of both crops and manures. The soil should be dry and porous, or should be thoroughly drained. Ample provision should be made for the saving of manures. Side-hill barns afford cellars in which these may be kept without waste, their bulk augmented, and those changes produced upon them which are so essential to their highest efficacy. If no good springs, streams, or wells can be obtained, cisterns for rain water should be provided. Barns are usually built of wood, stone, or a few of brick, and more recently, of concrete or gravel wall. The gravel wall can be made cheaper than stone walls, and can be built on farms affording only gravel and small stones of a quality too poor to build ordinary stone walls. Barn floors are usually of wood; when intended for the threshing or handling of grain should be tight and smooth, and be clean from foul seeds and dirt. Stone flags are sometimes laid, but they are too unyielding for threshing grain with the flail. Oak, beech, or yellow pine form excellent floors. The threshing floors described by Columella, were prepared by wetting the earth with the lees of oil mixing in some chaff, and ramming the whole down firmly; chaff was then trodden on the floor, and the whole left to dry in the sun. The lees of oil were said to check vegetation, and drive away vermin. In England cement floors are sometimes employed. In some instances a cement floor is made, timbers laid on that, and a wooden floor over all, openings being made in the walls of the building to allow a free air

lation of air beneath the wooden floor. We need no such precaution in our drier climate. Roofs used to be formed of coarse rushes or reeds properly bound, straw thatch, or clay tile, laid in coarse hay or mortar. In England they are now generally formed of shingles of wood or slate; in this country they are usually of wood, and now and then of slate. The preparation of corrugated iron, at a comparatively cheap rate of cost, suggests that material as one of the best for a well-built barn. The roof deserves more attention than it usually receives at the hands of the farmer who wishes to be truly economical in his expenditure for buildings. Finally, let all farmers remember that ventilation is one of the most important things to be secured, especially in stock barns.

BARNABAS, EPISTLE OF, an ancient epistle in the Greek language, divided into 20 chapters, 4½ of which are wanting, at the beginning of the epistle, in all the Greek MSS., but were found by Hugh Menard in an ancient Latin version. This epistle is cited by ancient authors as far back as Clement of Alexandria. During the 9th century, it was lost, and was again discovered in the 17th by the Jesuit, Sigimond. It is a question among the learned, whether it is the work of the apostle Barnabas, or not. Hefele, a distinguished living scholar of Germany, labors to prove that it cannot be; and attributes it to a Christian of Alexandria, of the early part of the 2d century.

BARNABAS, SAINT, one of the so-called apostles of the second class, i. e. a bishop, ordained by the apostles strictly so called, and associated with them in a wider circle of labors, and a more extensive exercise of episcopal authority, than were assigned to ordinary bishops. His proper name was Joseph; Barnabas being an appellative given him by the apostles, and signifying "Son of Consolation." He was a Hellenist Jew, of the tribe of Levi, and was born at Cyprus, apparently of wealthy parents, engaged in trade, as he is said to have been one of those who brought their property to the apostles for the common fund. Clement of Alexandria says he was one of the 70 disciples of Jesus Christ, and Alexander, a monk of Cyprus of the 8th century, narrates that he studied under Gamaliel, at Jerusalem, and was converted by seeing the miracle of the healing of the lame man at the pool of Bethesda. St. Barnabas is said, by the early Christian writers, to have been a man of majestic figure, and great innate beauty, which accounts for his having been taken for Jupiter by the pagans of Lystra, related in the Acts of the Apostles. That he was a man of extraordinary talent and zeal, is manifest from the notices of him in the Holy Scriptures and elsewhere. He was one of the first to comprehend the catholic character of Christianity, and its destined triumphs among the heathen nations. He first appreciated the special vocation of St. Paul, and when the other Christians looked on him with suspicion and distrust, took him under his protection.

Barnabas was sent by the apostles to govern the first Gentile Christian congregation at Antioch, where the name Christian first came into use. While there, he sent for St. Paul to join him, and the latter seems to have been at first acting under his orders. In concert with him, he planned and undertook the first great missionary tour (A. D. 45, 46). At the end of this tour, they returned to Antioch, and when the Judaistic and catholic principles came into collision and caused a controversy, both went on to the council of Jerusalem, where Barnabas exerted a powerful influence in ridding Christianity of Jewish rites, and obtaining an authoritative recognition of its catholic character. On his return to Antioch, he remained there in company with St. Paul between 1 and 2 years, when they consulted together about a second missionary tour. Disagreeing about some of their arrangements, each one marked out his own plan of operations for himself. Nothing is known concerning his apostolic career after this, or concerning the place, time, or manner of his death. Alexander of Cyprus relates that he was stoned to death by the Jews at Salamis, between A. D. 58 and 57, and that his body was found by Anthonius, bishop of Salamis, about the year 491.

BARNABITES, a religious order, properly called Regular Clerks of St. Paul, and deriving the name of Barnabites from their church, dedicated to St. Barnabas, at Milan. This order consists at present of 2 branches, formerly distinct, but united into one during the time of St. Charles Borromeo. The origin of the older branch, who were properly called Ambrosians, is uncertain, but is supposed to date from the pontificate of Gregory XI. (1370-1378). The younger branch was founded during the 16th century, for the purpose of preaching and administering the sacraments among the populace of Milan, who had become much corrupted by the continual presence of a multitude of German soldiers in the city, and who were also much afflicted by pestilence. In 1579, their constitutions and rules were fully revised and established, under the direction of St. Charles Borromeo. The mother-house is at present in Rome, and the order numbers about 20 colleges in Italy and the Austrian dominions.

BARNAOLE, a name commonly given both to the pedunculated and sessile cirripeds. By the older naturalists they were classed with the testaceous mollusca, the pedunculated forming the genus *Lepas*, and the sessile the genus *Balanus*. Those provided with the fleshy peduncle or footstalk, as well as those without it, are found firmly fixed below the level of the water to the surface of rocks, shells, and floating substances. Adhering to the bottoms of vessels, they are carried to almost all parts of the world, and are found in almost all seas, even in the Arctic ocean. In warm climates, particularly, the barnacles attach themselves in such numbers to the bottom of vessels, especially to those not protected by copper, as often to retard their

progress. Their bodies are enclosed in shells, white or of a purplish blue color; the peduncle is a fleshy worm-like stem, the extremity of which is fixed to the object upon which the animal is stationed. The food of the barnacles consists of small crustacea and mollusks; these are entangled by the many-jointed cirri which are perpetually thrown out and folded again, so as to serve the purpose of casting a net, which drags the prey to the mouth. The young are produced from eggs, which are discharged by the female in great numbers. They are very different in form and habits from their parents. On emerging from the egg, they are quite free, possessing locomotive organs, and being furnished also with large lateral eyes. In due time a metamorphosis takes place, and assuming the shapes and habits of their parents, they affix themselves to their future permanent place of residence. It would appear that the growth of these animals is very rapid, for a ship perfectly free from them will return after a short voyage covered with them below the water-line. The flesh of some of the varieties of the barnacle was esteemed by the ancients, by whom they were well known, as a great delicacy, and at the present day the Chinese eat the flesh of the barnacle, which is regarded as a luxury. Except for the obstruction to vessels, they seem to be perfectly harmless, and indeed often prove an excellent protection, enclosing with their hard crust submarine structures of wood. The barnacle was in ancient times supposed to produce the bird known as the barnacle goose, and this absurd fancy appears to have been very generally entertained in those countries where the bird was found. Thus Hudibras:

As barnacles turn Poland geese,
In th' islands of the Orades.

This fancy was not confined to poets, but a great number of historical writers, who are justly regarded as authority on other subjects, certify from their own observation to this strange origin of the goose; thus Boëce, the oldest Scottish historian, denying that the geese grow on trees, as some believe, declares that under his own observation, a tree cast on shore in 1480 was sawn asunder, when there appeared a multitude of worms "throwing themselves out of sundry holes and bores of the tree; some of them were rude, as they were new-shapen; some of them had both head, feet, and wings, but they had no feathers; some of them were perfect shapen fowls." Passing the depositions of a host of unimpeachable witnesses, we find Gerard, in 1686, publishing, in his "Herbalist," the following account, which we have somewhat abridged: "There is a small island in Lancashire, wherein are found the broken pieces of old and bruised ships cast thither by shipwreck, and also the trunks and bodies of rotten trees cast up likewise, whereon is found a froth that in time breedeth into certain shells, containing a thing in form like a lace of silk finely woven, one end whereof is fastened into the inside of the shell, the other is made fast unto the

belly of a rude massa, which in time cometh to the shape and form of a bird; when it is perfectly formed the shell gapeth open and the first thing that appeareth is the foresaid lace, then come the legs of the bird hanging out; in short space it cometh to maturity and flieth into the sea, where it gathereth feathers, and groweth to a fowle." It is from this fabulous connection with the geese, that the generic name *anatifa* of De Lamarck (Lat. *anas*, duck) is still retained for the true barnacles—those furnished with the footstalk; and so of the name *anserifera* of Linnaeus applied to one of the species of this genus, which is called *lepa* (See ORNITHOLOGY.) The barnacle goose weighs about 5 pounds; the bill is black with a reddish streak on each side; the cheeks and throat, with the exception of a black line from the eye to the beak, white; upper plumage marbled with blue, gray, black, and white; tail black; under parts white; legs dusky.

BARNARD CASTLE, a market town in England. It derives its name from a castle (now in ruins) built by Barnard, grandfather of John Balliol, king of Scotland. It is noted as the birthplace of Balliol, and contains a hospital, founded by him in 1229.

BARNARD, ANDREW FRANÇOIS, a British general, born in the Irish parish of Faban, co. Donegal, in 1778, died Jan. 17, 1855, at the royal hospital, Chelsea, of which he was lieutenant-governor. He was severely wounded in the Peninsular war, and slightly at the battle of Waterloo. The duke of Wellington entertained a high regard for his military abilities, and, during the occupation of Paris by the allies, appointed him commandant of the British forces.

BARNARD, FREDERIC A. P., LL. D., an eminent scholar and educator, born at Sheffield, Massachusetts, in 1809. He was educated at Yale college, where he graduated with high honors in 1828. In 1829 he was appointed tutor in Yale college, but only held that position about 6 months. In 1831 he became one of the instructors in the American asylum for the deaf and dumb at Hartford, and in 1833 removed to the New York institution for the deaf and dumb, where he taught with decided ability until 1838. In that year he accepted the appointment of professor of mathematics and natural philosophy in the university of Alabama, which he held till 1843, and afterward filled the chair of chemistry in the same institution until 1854. In the latter year he was offered and accepted the chair of mathematics and astronomy in the university of Mississippi, and in 1856 was elected president of the university. The same year he took priestly orders in the Episcopal church. Jackson college, Mississippi, conferred on him the degree of LL. D. —Dr. Barnard published in 1830 a small treatise on arithmetic, and in 1834 a grammar. Since that time, though writing occasionally for educational and scientific periodicals, and always with great ability, he has not appeared before the public in any extensive work until 1855, when his "Letters on College

Government, and the evils inseparable from the American college system in its present form," was published. This is a work of extraordinary ability, and has excited the attention of the ablest minds of the country. About the same time, though perhaps written previously, appeared his "Report on Collegiate Education made to the Faculty of the University of Alabama in 1854." Dr. Barnard has been a contributor to the "American Journal of Education" from its commencement.

BARNARD, HENRY, LL. D., a distinguished educator, born in Hartford, Connecticut, Jan. 24, 1811. He entered Yale college in 1826, and graduated in 1830. He had decided to devote himself to the legal profession, but, regarding a thorough acquaintance with English history and literature as indispensable, he spent 2 hours a day, for the first 2 years after his graduation, in reading law, and the remainder of his time in attaining a familiarity with the best English classics. At the expiration of this period, he entered with great zeal upon the study of the law, but reserved 2 hours a day for classical culture. He next spent some months in travel, visiting almost every part of the union, and having been admitted to the bar, sailed in 1835 for Europe, where he spent about 18 months, devoting his attention mainly to the social condition of the people, traversing the greater part of England, Scotland, and Switzerland, on foot. Recalled from this tour by the sickness of his father, in 1837, he was elected a member of the state legislature, and for 8 years represented his native city in that body, with great ability. During this period, he devoted special attention to the promotion of humane and scientific objects, urging and securing appropriations for the education of the deaf and dumb, and the blind, for the improvement of the condition of the indigent insane, and the town poor; the reorganization of county prisons, the incorporation of public libraries, and the completion of the geological survey of the state. The most signal service, however, which he rendered to the state, was, in the origination and carrying through an act for the reorganization of its common school system. The bill, which, under his influence, passed the legislature, provided for the appointment of a board of commissioners of common schools, who should investigate the condition of the schools of the state, and by addresses, lectures, correspondence, and the recommendation of such measures as might promote the cause of education, endeavor to elevate and improve them. Of this board, Mr. Barnard was a member and the secretary for 4 years. In 1842, a change occurring in the politics of the state, the act establishing a board of commissioners was repealed, and the old order of things restored.—The ensuing 15 months were spent in a tour of the United States, for the purpose of obtaining the materials for a work on the "History of Public Schools and other means of popular education in the United States." Just as he had completed his

preparations for writing this work, he was called to Rhode Island, to take charge of the public schools of that state. Here, in the short space of 5 years, he created and thoroughly established a system of popular education, which, under the wise and careful administration of his successors in office, has become a model for general imitation. His labors during this period were excessive, and, but for the extraordinary vigor of his constitution, he must have sunk under them. At length his health began to give way under such severe toil, and he was compelled to resign his office. He returned to Hartford, resolved to rest from his labors; but, to a man of his ardent temperament, rest was impossible. His pen and mind were still busy on his favorite subject. School architecture, a matter on which he had bestowed great labor and thought, the organization of teachers' institutes, which he had originated in, 1839, the practical awakening of the minds of the people to the necessity of a higher standard of education, all employed his time. Through his influence, wealthy and intelligent men throughout the state became interested in the cause. Graded schools became popular; high schools were established in several of the cities and larger towns; teachers' institutes were organized in every county, and in 1850, the demand for educated and skilful teachers had become so great that a normal school was demanded. It was established, and the part of principal was conferred on Mr. Barnard. To the duties of this office were added those of state superintendent. The progress made in the cause of education in Connecticut during the succeeding 4 years was extraordinary, and testified to the energy and ability of the superintendent. At length in January, 1855, enfeebled health compelled him again to retire from the work of his choice, not as before to see it overthrown, but to commit it to other hands who would carry out his views. In the summer following, he commenced the publication of the "American Journal of Education." To this and to the preparation of some works on education he is now devoting his time. Mr. Barnard deserves the credit to an uncommon degree of possessing great practical talent. In his whole career, his aim has been to secure the greatest amount of practical results in a given time, in the promotion of educational measures. Mr. B. is well known and highly honored by the friends of education and philanthropy in Europe. In this country he was elected to the presidency of the American association for the advancement of education in 1855, and was offered the presidency of two state universities. The degree of LL. D. was conferred on him in 1851 by Yale and Union colleges, and the year following by Harvard university. His principal works are: "School Architecture," of which over 130,000 copies have been circulated, "Normal Schools in the United States and Europe," "Tribute to Gallaudet, with History of the American Asylum and of Deaf Mute Instruction," "National Educa-

tion in Europe," "Connecticut Common School Journal," "Rhode Island Journal of Instruction," &c., &c.

BARNARD, HENRY, a British lieutenant-general, born at Wedbury, Oxfordshire, in 1799, died before Delhi, of dysentery, July 5, 1857. He was from his earliest youth connected with the English army. In 1854 he served in the Crimea, and in June, 1857, he succeeded to the command of the troops before Delhi, on the death of Gen. Anson, whom he soon followed to the grave.

BARNARD, JOHN, an American divine, born in Boston in 1681, graduated at Harvard college in 1700, died at Marblehead in 1770. He was in early life a chaplain in the army, was present at the siege of Port Royal, and visited England during the excitement caused by the famous trial of Dr. Sacheverel. On his return, the North church in Boston was built for him, but he was finally disappointed in his expectation of being elected pastor. He was ordained minister at Marblehead in 1716, in which place he continued to officiate until his death. He was influential, not only as a spiritual teacher, but also as an adviser in temporal affairs, being qualified to act either as pastor, doctor, sailor, carpenter, tailor, or butcher. He preached the first Dudsonian lecture at Cambridge that was ever published, and left several discourses, a collection of hymns, and a short sketch of the eminent ministers of New England.

BARNARD, SIR JOHN, lord mayor of London, born at Reading, in Berkshire, in 1685, died at Clapham, Aug. 29, 1764. His parents were Quakers, and he was instructed for a time by a teacher of that persuasion, but at an early age was transferred from school to the counting-house of his father, who was a flourishing wine merchant. At the age of 19, he left the sect of his parents, and was baptized into the church of England, of which he continued ever afterward a zealous member. His energy and ability soon gained him the principal management of his father's business, and so much eminence among the wine merchants of London, that in 1721 he was chosen by them to attend to their interests in respect to a bill then pending in parliament. Shortly after his successful performance of this duty, he was elected a member of parliament for the city of London, which he continued to represent during nearly 40 years. He exercised most influence upon measures pertaining to commerce and finance, and generally voted with the party opposed to the administration of Sir Robert Walpole. In 1728, Mr. Barnard was chosen an alderman of London; in 1732, was knighted, presenting to the king a congratulatory address on his return from Germany; in 1735, discharged the duties of sheriff, and, in 1737, became lord mayor. He formed a plan for reducing the national debt of England, which, deemed chimerical at first, was afterward adopted, and during the rebellion in Scotland, in 1745, he assisted in maintaining public credit

by agreeing with the leading merchants of London to receive the notes of the bank of England in payment of all debts. He retired from public life in 1758. A statue has been erected to him in the royal exchange.

BARNAUL, the chief town in the mining district of the Altai mountains, in Siberia, and the centre for the administration of the mines, situated on the small river Barnaulka, where it falls into the Obi, 230 miles S. S. W. from Tomsk. Its population in 1856 was about 10,000. It is built chiefly of wood, and has wide and regular streets. Of the 3 brick churches, neither has any architectural merit, and its spacious hospital for the accommodation of sick workmen is simple in its style. All the gold obtained in Siberia must be sent to Barnaul to be smelted, excepting the portion yielded by the Yablonay mountains, which is smelted at Nertschinsk. The gold-washing in the mountains begins the first week in May, and ends about the middle of September, and the rich miners send their gold to Barnaul once a year, and those who are poorer send it twice. When it is delivered to the authorities there, it is considered the property of the crown, and the miner has no more control of it. The smelting works are on a large scale, and the operations are conducted under the care of most intelligent officers. It is probable that the Russian mining engineers, as a body, are not surpassed by any men of their class at the present day. The officers in these mines are unequalled in the Russian empire for scientific knowledge, and would rank among the first savants of Europe as geologists, mineralogists, and metallurgists. The gold is smelted and cast into bars to be forwarded to the capital, and remains in the hands of government 5 months before the miner receives his share of the value. The silver obtained in the Altai contains a small portion of gold, with a minute quantity of copper. These metals are not separated in Siberia, but are sent to St. Petersburg in pieces about 14 inches square by 1½ inch thick, and the silver is extracted at the mint. Six caravans leave Barnaul for the capital with the precious metals, every year, each with a small guard of soldiers, and the journey is made in about 2 months. The Altai mines yield annually about 1,000 poods, or 36,000 pounds of silver, and the largest quantity of gold ever obtained in one year was 75,000 Russian poods. The governor of Tomsk, who is at the head of the mining department, is invariably chosen from the mining engineers, and is required once in 2 years to visit every mine and smelting works in the Altai. Next to him in authority is the *natchalnik*, or chief of the mines, who has under his immediate charge every officer and man in the Altai, and visits every station annually. There are many superior men of science and talent as officers in Barnaul. Every summer 10 or 12 young officers are sent into the mountains, each with a party of from 40 to 60 men, and the chief of the mines assigns to each a mine or part to be examined by his company. The

men dig a hole to the bed of auriferous sand, and the officers note carefully the quantity of gold obtained from 100 pounds of sand. This operation is repeated at intervals of 50 paces, and the result is laid before the director in Barnaul, who decides where there is sufficient gold to pay for working. At the same time the rocks are examined in search of silver ore. A geological map of the Altai is now in preparation by the officers in Barnaul, which, when completed, will probably be one of the best ever constructed by any geologist. On the north side of Barnaul, there is a magnetic observatory, where observations by day and night are registered and transmitted at stated periods to the proper authorities in St. Petersburg. There is also a museum, containing a good collection of minerals and a few Siberian animals, birds, and antiquities. The market at Barnaul is well supplied with provisions, by the peasants from neighboring villages, and the price of food is in general very cheap, but European wares are sold at extravagant prices. The society is superior to that of any other town in Siberia; there are a few ladies who play the piano-forte, and during the winter, after the return of the young officers from the mountains, even concerts and balls are attempted. A few wealthy merchants reside here to prosecute the trade in furs. Though the smelting of silver is an unhealthy occupation, the fumes which rise from the furnaces giving the workmen the lead colic, yet the men here who are engaged in the open air enjoy excellent health, equalling Europeans in robustness and hardiness. The workmen live in small and neat wooden cottages, and nearly all the peasants keep cows and horses. There are about 64,000 people, principally miners, under the direction of the chief of the mines, who resides in Barnaul. (See Atkinson's "Oriental and Western Siberia," London, 1858.)

BARNAVE, ANTOINE PIERRE JOSEPH MARIE, a French revolutionist, born at Grenoble, Oct. 22, 1761, guillotined at Paris, Nov. 30, 1793. He was the son of a lawyer, and was educated for the same profession. He early manifested a chivalrous and impetuous character, and cultivated elegance of dress and manners, combined with a disposition to reflection and order. At the age of 22 he was chosen by the bar of Grenoble to pronounce a discourse at the closing of the parliament; his subject was the "Division of Political Powers." He distinguished himself in 1788 by a pamphlet against certain arbitrary measures of the king; and a few months after, at the age of 28, was elected as a deputy of the third estate in the states general which met at Versailles, May 4, 1789. Here his talent, energy, and eloquence gave him a prominent position. He supported the movement for a national assembly; the formation of the national guard; the abolition of all feudal privileges; the declaration of the rights of man; the secularization of the church estates; the emancipation of the Jews; the

abolition of religious orders; the abolition of negro slavery; and opposed the absolute veto of the king, the liberty of taking office by members of the national assembly, and the conferring on the king the right of making peace and war. On the last two questions he separated from Mirabeau. In Oct. 1790, he was made president of the assembly. On May 11, 1791, modifying his former colonial policy, he proposed that no change should be made in regard to slavery without the consent of the planters; he was opposed by Robespierre, Sieyès, and Grégoire, and defeated. On the flight of the royal family and their arrest at Varennes, he was sent with Latour-Maunbourg and Pétion to bring back the captives to Paris. From the date of this event he was totally changed. He became the advocate of the king and queen, and maintained constant relations with the latter, endeavoring to bring them into unison with the constitutional party in the assembly. He now defended the idea of the inviolability of the royal person, opposed the proposition to give soldiers the right of denouncing their officers, spoke in behalf of priests who denied the authority of the assembly, and moved the order of the day on the question of the right of the assembly to dismiss the ministers. With this change in him the public favor disappeared, while he could exercise no effective influence on the course of the court. He accordingly retired to Grenoble in Jan. 1792, and devoted himself to political philosophy and literature until Aug. 29, when he was arrested on account of a pamphlet found in the king's cabinet. He was kept 10 months in prison at Grenoble; was transferred to Paris, Nov. 8, 1793, and was tried before the revolutionary tribunal Nov. 28, and guillotined 3 days after, aged only 32. His last words to the people about the scaffold were: "Behold the reward for all that I have done for liberty." A statue was erected to him in the senate house under the consulate, but on the restoration of the Bourbons it was removed. His works have been collected by M. Béranger (de la Drôme), and published at Paris in 4 volumes.

BARNEGAT, a post town of Union township, in the south part of Ocean county, N. J.; pop. 650. It lies on Double creek, near the inlet of that name, 1 mile from Barnegat bay. It has fine sea-bathing, and an abundance of wild fowl.—**BARNEGAT BAY**, on the east border of Ocean county, N. J., extends north from Barnegat inlet to the mouth of Metetecunk river, is 28 miles in length, and from 1 to 4 in breadth. Metetecunk, Tom's, and Forked rivers, and Kettle and Cedar creeks, discharge into it. Squan beach and Island beach, strips of sandy land from a quarter of a mile to a mile in width, separate it from the ocean. Its entrance is about a mile wide.

BARNES, ALAZER, a Presbyterian clergyman of Philadelphia, born in Rome, N. Y., Dec. 1, 1798. His father was a tanner, and until he was 17 years of age, he was employed in the

same occupation. At the age of 22 he graduated at Hamilton college, and in Nov. 1820, he entered upon his theological studies at Princeton, N. J. In April, 1824, he was licensed to preach, and was ordained and installed pastor of the Presbyterian church of Morristown, N. J., in Feb. 1825. Here he remained 5 years, when he removed to the pastoral charge of the first Presbyterian church in Philadelphia. Since the division of the denomination he has held a prominent position in the new school portion of it. Mr. Barnes is a very diligent student, and a successful expounder of the Bible. His commentaries on the Bible, so well known and generally adopted in families and Sunday schools, are a sufficient witness, written as they were in the midst of arduous duties, and while almost deprived of eyesight, a difficulty brought on by his unremitting labors when other men were asleep. The circulation of his "Notes on the New Testament" (of which there are 11 volumes), was supposed in 1856 to have reached nearly 400,000 volumes. Some of the volumes have been translated into several languages. He has also published able works on Episcopacy, on the "Scriptural Views of Slavery," and other subjects, beside numerous contributions to periodicals, and occasional essays and discourses. As a pulpit orator, he is calm, clear, and impressive, and belongs in the first rank of American divines.

BARNES, DANIEL H., an American conchologist, died near Troy, N. Y., Oct. 27, 1818. He had high attainments as a scholar, and devoted himself particularly to the interests of education. He took a prominent part in the establishment of the New York high school, and was an active member of the lyceum of natural history in that city. Though he taught in several seminaries, he declined the presidency of the college at Washington city. He published a variety of learned papers on conchology in "Silliman's Journal," between volumes 5 and 18. He was also a clergyman, and met his death on returning from New Lebanon, where he had preached on Sunday, by jumping from a stage, the horses of which had become unmanageable.

BARNES, JOSHUA, author, born in London, June 10, 1654, died at Hemingford, in 1712. He was educated at Christ's hospital, London, and at Emanuel college, Cambridge. Here he was distinguished by a minute and extensive knowledge of Greek; rather, however, that of a grammarian than a philologist. Though Dr. Johnson (who had spoken of Milton as "a giant among pigmies, the one-eyed monarch of the blind") described Barnes as a Grecian, as *unoculus inter cecos*, there is no doubt that his scholarship was great, at a time when the classics were more deeply studied than perhaps they since have been. Dr. Barnes, who had entered the church, was appointed regius professor of Greek at Cambridge, in 1695. He married a wealthy widow in 1700, and soon after published his annotated editions of Euripides, Anacreon, and Homer. He published a variety of other works, including English and

Latin poems and dramas, sermons, dissertations on classical subjects, and lives of Edward III. and of Oliver Cromwell. In 1711, when his "Homer" appeared, he strongly and vainly solicited church preferment from Harley, earl of Oxford. He was the friend and associate of Richard Bentley.

BARNES, THOMAS, English journalist, born in 1785, died May 7, 1841; educated at Christ's hospital, London (where Leigh Hunt was his contemporary). He graduated as B. A. from Pembroke college, Cambridge, with high honors, and as M. A. in 1811. His knowledge of Greek was considerable. After having published some powerful political letters in the "Times" newspaper, he succeeded Dr. (afterward Sir John) Stoddart in the editorship, which position he continued to occupy for nearly 25 years. He directed what others should write, rather than wrote himself. Among the best leaders from his pen was that on the character of George IV., which accompanied the obituary notice of that monarch, and a severe analysis of the character of Lord Brougham, suggested by the premature announcement of his death in 1839. Thomas Moore (who contributed satirical *jeux d'esprit* to the "Times," at his suggestion) has journalized him as "the best good man with the worst natured tongue," adding that he "had never heard him speak of any one otherwise than depreciatingly; but the next moment, after abusing him, he would go any length to serve him." He told Moore that, at one period, before he became a journalist, he was in treaty with Mr. Canning to become tutor to his son. Mr. Barnes had quite as much tact as talent, and combined great discretion with the watchful surveillance, so indispensable for the proper conduct of a newspaper. During the latter part of Mr. Barnes's connection with the "Times" he was one of the proprietors.

BARNET, called CHIPPING BARNET, a market town of England, in the parish of Chipping Barnet, Herefordshire, 11 miles from London. It has a church built in the year 1400, and a grammar school founded by Queen Elizabeth in 1578. An obelisk, erected in the year 1740 by Sir Jeremy Sambrook, commemorates the battle fought in the neighborhood in 1471, between the York and Lancaster armies when the latter were defeated, and their leader, the Earl of Warwick, slain.

BARNETT, MORRIS, an English actor, died March 18, 1856, at Montreal, obtained celebrity as a delineator of French character in his own country, as well as in the United States. His most brilliant success in London was in a play called "Monsieur Jacques," which he had himself adapted from the French. Among his most successful adaptations is the "Servant Family," after the French *Le mari à la campague*, a play which continues to maintain its popularity upon the English and American stage.

BARNEVELDT, JAN VAN OLDER, first pensionary of Holland, born in the province

of Utrecht, at Amersfoort, either in 1547 or 1549, beheaded May 18, 1619. The United Provinces having revolted against the tyranny of Spain, Barneveldt eagerly embraced the popular cause, and during his whole life proved, by word and deed, his devotion to liberty. His eminent talents were soon recognized, and he was scarce 20 years of age when he was chosen to the office of counsellor and pensionary of Rotterdam, and served also a short time in the army as a volunteer. On the failure of the negotiations between the United Provinces and the kingdom of France, for the surrender of the sovereignty of the Dutch states to the French monarch, it was deemed expedient to despatch an embassy to Elizabeth of England, whose displeasure the states had reason to fear on account of the proposals to her rival, Henry. Barneveldt was one of the principal members of this embassy, sent in 1585. Contrary to expectation they were graciously received, and although Elizabeth for wise reasons declined the union of the two countries, she promised never to forsake the provinces, and to support them while her life should last. Waiving the offered sovereignty for the present, she consented to appoint a governor-general of the United Provinces in her own name, and to send an army of 5,000 foot and 1,000 horse into the Netherlands. As a security for the payment of her necessary expenses, English garrisons were to be admitted into the towns of Flushing, Rammekens, and Briel, and into 2 fortresses in the Holland province, until the debt was paid. Other conditions were added, placing much power in Elizabeth's hands, and making the sovereignty available whenever she chose to accept it. Very shortly after the treaty was signed, Dudley, earl of Leicester, was appointed governor-general, a man whose reputation for public affairs was contemptible, and his private life one of the worst character. The knowledge which Barneveldt had obtained of him during his visit to England, no doubt prompted him to urge the states of Holland to confirm the authority of the young prince, Maurice, as stadtholder of that province and Zealand, before the arrival of Leicester. His suspicions of the earl proved perfectly correct, and the unscrupulous conduct of Leicester soon drew down a remonstrance from the states, which had the effect of disgusting and causing him to return to England in little more than a year after his arrival in the Netherlands. Maurice of Nassau, son of the murdered William, prince of Orange, was soon declared governor-general in place of the earl, and on account of his youth the count of Hohenlohe was associated with him as lieutenant-general. Barneveldt had by this time been created advocate of Holland, but in the next year, during the discussions between Elizabeth and the states, growing out of Leicester's treatment, Barneveldt dreading his return, desired to resign his office, and was only induced to retain it by the urgent solicitations of the people. On the re-

turn of Leicester, incensed with Maurice for accepting the office of governor-general, and with Barneveldt for supporting him, he formed the design of seizing and conveying them both to England. They received information of his purpose, and suddenly left the Hague for Delft. Leicester had still a powerful party left among the clergy, who, in a remonstrance presented in the name of all the ministers of Holland, admonished the states to preserve a good understanding with England and the earl. Barneveldt soon answered this address by a cutting reply, saying that the states were very well able to accomplish their object without the assistance of the clergy, and sarcastically advising them to take care lest, under the cloak of religion, evil-minded persons should endeavor to bring their rulers into odium with the people. In 1590 a plan for the surprise and capture of Breda, part of the hereditary estates of the late William of Orange, was submitted to Maurice, who referred the matter to Barneveldt. By him it was warmly seconded. On March 1, 68 soldiers embarked in a small vessel, being concealed in the hold, and, escaping the most imminent danger of discovery, at midnight emerged from their hiding-place and surprised the garrison, while Maurice marched upon the town and took it. This brilliant achievement reflected the highest credit on all the parties connected with it; and Barneveldt, who had mainly contributed to its success by his aid and counsel, was presented with a rich gilt cup, on which a representation of the whole was chased. The remarkable military triumphs of Prince Maurice over the Spaniards and their great leader, the duke of Parma, now filled the hearts of the people with the most extravagant joy. The warlike operations of William of Orange had been uniformly unfortunate; those of his young son, on the contrary, were of such brilliant success, as to draw to him the attention of all Europe. The condition of the United Provinces was vastly changed for the better, and once more prosperity reigned in the land despite of the protracted war. The merits of Barneveldt in producing so happy a change from former miseries, should not be regarded as less than those of Maurice; from the time of his appointment to the advocacy of Holland, he had begun to acquire influence with the authorities, and such reliance was placed upon his judgment that he was enabled to induce the states to consent to all beneficial measures, and his diligence was unceasing in aiding the projects of Maurice, by supplying his armies with provisions, material, and ammunition. In the year 1600 Barneveldt first began to suspect the ambitious designs of Maurice, who he feared would, at no very distant time, make use of the army as a means of grasping more power than was consistent with the liberties of his country; the Spaniards were now anxious for a suspension of hostilities, and Maurice was very unwilling to accede, while Barneveldt and other true patriots were exceedingly anxious for it, but only

on terms of the most favorable nature. In 1608 Queen Elizabeth died, and Barneveldt, with others, was despatched on a magnificent embassy to propitiate her narrow-minded and pedantic successor. From that time until 1609 Barneveldt was engaged in negotiations to secure an honorable peace, during which period he had great trials to contend with, and incurred the deadly animosity of Maurice, who clearly saw that the grand pensionary had detected, and was determined to thwart, his ambitious designs. In spite of the opposition of the prince and his followers, the counsels of Barneveldt prevailed with the states-general, and a truce of 12 years was proclaimed, from April 9, 1609. This truce Prince Maurice bitterly opposed, for he knew himself sufficiently to be sure that his talents could only be serviceable in the camp, and war was his passion. Barneveldt had been his strongest friend from the hour of his father's murder, he had spared no pains that the armies should go well equipped into the field, and his financial talents were of such order that he was better enabled to raise loans than any man in the United Provinces. But in war he never forgot peace, and it was the great purpose of his life to secure an honorable one by the triumphs of the sword. The quarrels between the prince and the pensionary were long-continued, and became more and more violent on the part of Maurice, who resolved on vengeance when he found himself unable to prevent the truce. This was, for Barneveldt, a crowning glory, for the independence of the United Provinces was fully guaranteed by Spain, and the rights of Protestantism respected. Thus the 2 great objects for which the inflexible patriot had toiled for 40 years were at last accomplished, without the least stain upon his private character or one mean act of diplomacy. The disposition of Maurice was not of a passive order, nor was he disposed to remain content with the state of affairs and merely fill the office of stadtholder. He had become fully resolved on absolute power, but in order to compass it one obstacle must be removed—Barneveldt must be crushed. The course of events disclosed to Maurice the opportunity he sought, and he beheld it in the great controversy then raging between the Calvinists and the Arminians. He already had vast influence with the army, and saw that the Calvinists were waxing strong. He knew that the inflexible Barneveldt would not abandon the Arminian creed, and he was assured that by siding with his enemies he should acquire absolute sovereignty. Many of the sycophants that attached themselves to him in order to serve their own purposes were ready to spread any calumny against the grand pensionary. Barneveldt was accused of a plot to deliver his country again to Spanish tyranny. The base lie gained credence with the people, and drove them to frenzy. They heaped execration upon him, and demanded his life as a sacrifice to their fury. His unanswerable vindication availed him nothing. The last public act of the great states-

man ought at least to have secured him an honorable retirement, even if his removal had been determined. This was the redemption of the cautionary towns which had been placed in the power of the English for security on a loan of moneys from Queen Elizabeth. By masterly negotiation, Barneveldt managed to redeem them from the hands of James I. of England, on the payment of about $\frac{1}{3}$ of the debt. No gratitude, however, was manifested toward him for this signal service. The prince, at the head of his armies, seized and held all the chief towns in terror, dispersed the militia, which the magistrates had assembled, and, becoming at the same time prince of Orange, by the death of his elder brother, who had for many years been held a prisoner in Brussels by the Spaniards, he openly proclaimed his authority. Barneveldt, Grotius, and other distinguished Arminians, were arrested, cast into prison Aug. 29, 1618, and thus Maurice was left without a rival. The national synod, so long demanded by the Gomarists, was at length convened, a few months after the arrest of the wise patriot, who had steadily opposed the project of assembling such a body. He saw plainly that it could only result in tyranny, but Maurice, having gained his ends in regard to Barneveldt, favored the plan in all its particulars. On Nov. 18, this famous synod assembled at Dort, and continued its sittings for 6 months. Barneveldt remained in prison, and his trial was a mere mockery of justice, every one of his judges being appointed directly or indirectly by Maurice. He was condemned to die. In the midst of terrors and privations, debarr'd even from the sight of his wife and children, he was undismayed. Condemned to a cruel and untimely death, he was comforted by the memories of a long life filled with honor, and by the truth of the words of his great religious teacher, Arminius, "A good conscience is paradise." When the feeble old man was led to execution his steps trembled as he approached the scaffold, but not with fear. He was heard to exclaim, "What then is man!" and, turning to the multitude, told them to remember that he was no traitor. He bowed his neck upon the block, the axe fell, and his white locks were reddened with his blood. At the time of his execution he was more than 70 years of age, over 50 of which had been spent in the service of his country. His sons formed a plot to revenge his memory by assassinating Maurice. The conspiracy was detected, and while one escaped the other was seized. His mother went to the prince to intercede for him, and was asked by Maurice, "How is it that you seek pardon for your son, as you did not for your husband?" "Because," she answered, "my husband was innocent, but my son is guilty." The dictator had not the generosity to forgive, and the son of Barneveldt also perished on the scaffold.

BARNEY, JOSHUA, a commander in the United States navy, born in Baltimore, July 6, 1759, died at Pittsburg, Penn., Dec. 1, 1818. He made several voyages before he was 16 years

of age. When the war commenced between Great Britain and the American colonies, Barney was appointed master's mate in the sloop of war *Hornet*, and while recruiting for volunteers, bore the first U. S. flag seen in Maryland. In 1775, the *Hornet* joined the fleet under Commodore Hopkins, and captured the town and fort of New Providence, one of the Bahama islands, bringing off a large number of cannon, &c. In 1776, Barney, scarce 17 years of age, was made lieutenant for his gallant conduct in the schooner *Wasp*, which captured the British brig *Tender* in Delaware bay. Soon after this he embarked on the *Sachem*, which captured an English brig after a severe action. The *Sachem* having taken other vessels, Barney was placed on board of one of them as prize master, and was captured by the *Perseus* of 20 guns, but soon exchanged at Charleston, S. C. In 1777 he joined the Virginia frigate, which was taken by the British, having run aground in getting to sea. He was again exchanged, and joined a privateer which sailed in Nov. 1778, for France, encountered the *Rosebud* letter of marque, and on her return took a valuable prize, arriving safely at Philadelphia in 1779, after an absence of 11 months. In 1780 he married a Miss Bedford, and shortly afterward, on his way to Baltimore, was robbed of the money he had gained from prizes. He soon went on board the *Saratoga*, of 16 guns, Capt. Young, which fell in with the ship *Charming Molly* and 2 brigs, and took them. Barney headed the boarders thrown aboard the *Molly*, against a very superior force. He was placed on board of one of the prizes, but on the following day all 3 were retaken by the *Intrepid*, 74. The *Saratoga* escaped, and never having been heard of again, is supposed to have foundered at sea. Barney remained a prisoner in England for some time, but at length fled, and arrived safely again in Philadelphia, in March, 1782. He was at once appointed to the command of the *Hyder Ali*, a small vessel of 16 guns, and encountering off the capes of the Delaware, the Gen. *Monk*, of 20 guns, took her after a hot fight of less than half an hour. For this brilliant achievement, he was voted a sword by the legislature of Penn., and appointed to the command of the Gen. *Monk*, which was purchased by order of congress, and sailed for France in Nov. 1782. He returned to Philadelphia with a large sum of money lent by the French government, and the information that preliminaries of peace had been signed. In 1795 he was commissioned as captain in the French service, but gave up his command in 1800, and returned home. On the declaration of war against Great Britain in 1812, he was appointed by Congress to the command of the flotilla which defended Chesapeake bay. He also took part in the battle of Bladensburg, and was severely wounded. By the corporation of Washington he was voted a sword, and thanked by the legislature of Georgia. In 1818 he determined to emigrate to Kentucky, but on his way was taken ill and

died. He belonged to the old school of naval officers; he was rough and impetuous, but a thorough seaman, of indomitable courage, and possessing good principles and a kind heart.

BARNSELEY, or **BARNESLEY**, *St. Mary*, a market town of Yorkshire, England, 8 miles from Sheffield. It has a spacious market place, a free grammar school, a national school, a public library, and extensive manufactures of linen, yarn, and drills, a glass factory, iron foundry, needle and wire works, dyeing and coal works. Barnsley communicates with Wakefield and Leeds by the Barnsley canal, which connects the Calder and Don. Barnsley is believed to be very ancient. Near the town are the remains of the Monk Briton priory. Pop. 14,918.

BARNSTABLE, the most eastern county of Massachusetts; area 290 sq. m. It is composed of a peninsula and several islands, including Cape Cod, which extends northerly for a distance of 65 miles. The surface is level, the soil generally light and sandy. It exports large quantities of salt. The N. W. part of the county is crossed by the Cape Cod branch railway. It was organized in 1685, and was probably named from Barnstable, a seaport town of England. In 1850, the productions of this county were 52,639 bushels of Indian corn, 84,756 of potatoes, 9,142 tons of hay, and 108,128 pounds of butter. There were numerous mills and factories, 72 churches, 5 newspaper offices, and 7,682 pupils attending public schools; pop. in 1855, 85,442.—Its capital of the same name is a seaport town, and seat of justice, on the south side of Barnstable bay. It has a bank, a savings institution, an insurance company, and a weekly newspaper. The inhabitants are mostly employed in the fisheries or in the coast trade. The aggregate tonnage of the shipping, June 30, 1854, was 7,515 tons registered, and 74,443 enrolled and licensed. During that year, 19 schooners, with an aggregate burden of 2,063 tons, were admeasured. It is in daily and frequent communication with Boston. Pop. in 1855, 4,998.

BARNSTAPLE, a parliamentary and municipal borough, seaport, market town, and parish of England, county of Devon, on the Taw, 6 miles from its discharge into Barnstable bay. It is believed to have been founded by King Athelstan. It is well built, has an ancient church, a grammar school, where Bishop Jewell and the poet Gay were taught. It has a mechanics' institute, tanneries, potteries, and iron foundries, paper mill and manufactories of woollen cloths, cotton lace, and nets. It sends two members to the house of commons. The beauty of the situation, its salubrity, and the comparative cheapness of living, have operated to increase its inhabitants. The streets are well paved and lighted with gas.

BARNUM, PHINEAS TAYLOR, an American speculator, born at Bethel, Conn., July 5, 1810. In his early youth he displayed a fondness for practical jokes and a constant desire for trade, which foreshadowed the grander speculations

and deceptions of his riper age. The father of young Barnum was the proprietor of the village tavern, and here the peculiar talents of the youth had ample opportunity to strengthen and increase with his experience. At the age of 18, his father placed him in a country store which he had established in the village, and from this period until the year 1828, he continued in business in various parts of Connecticut, and also in Brooklyn, L. I. In the mean time, having accumulated a small sum of money, by his economy and by speculating judiciously, Mr. Barnum was enabled to return to his native village and open a small miscellaneous store. Here he was very successful, and taking advantage of the mania for lotteries which then prevailed throughout the country, he visited New York, and obtained some insight into their management. Returning to his store, he immediately entered into this business upon a large scale, established agencies in various cities and towns, and realized considerable sums from the immense sales of tickets which he was thus enabled to make. In 1829 he was clandestinely married at New York to a young lady of Bethel, to which place he returned and shortly after purchased a lot of land and built himself a house. The predominating trait in Mr. Barnum's character would not, however, permit him to settle down as a country store-keeper, and we soon hear of him as the editor of the "Herald of Freedom," published in the town of Danbury, Conn. In this undertaking he was also very successful in a pecuniary point of view, but his freedom of speech and the boldness of his opinions soon gained him many enemies, and he was several times sued for libel, and once confined in prison for 60 days. In 1834 Mr. Barnum removed with his family to New York, having by misfortune become much reduced in his circumstances. Here he tried many ways to obtain a livelihood, but without much success, until 1835, when hearing of Joice Heth, a colored woman then on exhibition in Philadelphia, as the reputed nurse of George Washington, he visited her owners, and becoming satisfied that here was an opportunity of retrieving his broken fortunes, on the 10th of June he became her purchaser for the sum of \$1,000, which he had obtained from various friends. By widely advertising this curiosity, considerable excitement was created, and the receipts soon amounted to \$1,500 per week. This was Mr. Barnum's first attempt as a public showman, and finding the business profitable, he collected a small company and travelled through the country, realizing large sums wherever he halted. In 1836, Joice Heth died, and a post-mortem examination proved her to have been but 75 or 80 years old, instead of 161, which was her reputed age. From 1836 until 1839, Mr. Barnum continued in the exhibiting business, but was then obliged to return to New York, again reduced to poverty. He now barely subsisted by writing occasional articles for Sunday papers, and by petty jobs

which he obtained from day to day. In 1841, the establishment known as Scudder's American museum, was announced for sale, and with a boldness almost unparalleled in mercantile transactions, Mr. Barnum negotiated for its purchase; without owning a dollar, he made satisfactory arrangements with its holders, and in December took possession. Here his fortune turned; at the end of a year he was able to pay all the obligations which he had entered into on account of the museum. In 1848 he had added to it two other extensive and valuable collections, beside several minor ones, and single curiosities without number. It now became the most popular place of amusement in the United States. Here have been exhibited at various times, the model of Niagara Falls, white negroes, the Fejee mermaid, woolly horse, and other distortions and freaks of nature, all of which were visited and believed in by thousands. The receipts during the exhibition of the mermaid for 4 weeks, trebled those of the 4 preceding. In 1842 Mr. Barnum first heard of Charles S. Stratton, of Bridgeport, then 5 years old, less than 2 feet high, and weighing only 16 pounds. He soon became known to the world as Gen. Tom Thumb, and was exhibited in the United States with astonishing success until 1844, when Mr. Barnum sailed with him for England, accompanied by his parents, tutor, &c. Throughout Great Britain, he was received with a popularity surpassing even that of America, and for 4 months the receipts averaged \$500 per day. Tom Thumb was presented to the royal families of England, France, and Belgium, courted and caressed by the nobility, and presented with the most costly gifts. In Coventry Mr. Barnum purchased the "Happy Family" of birds and animals, for which he paid \$2,500. In 1847 they returned to America, where the "General" was again exhibited for a year with increased success, the receipts in the U. States and Havana amounting to \$150,000. In 1849 Mr. Barnum conceived the idea of inducing Mile. Jenny Lind to visit America, and after much correspondence and negotiation, he entered into an agreement with her, by which he engaged her to sing in America for 150 nights at \$1,000 per night, and the expenses of herself and troupe to be defrayed by him. Jenny Lind arrived in New York on Sunday, Sept. 1, 1850. The excitement upon this occasion has perhaps never been equalled in America. She gave her first concert at Castle garden, and from that time until June, 1851, she gave 93 concerts, which were both to herself and Mr. Barnum a succession of triumphs, the gross receipts for the whole amounting to over \$700,000. The tickets were generally sold at auction, the highest price paid for one ticket being in Providence, R. I., viz. \$650. Mr. Barnum continued before the public with varying success from 1851 until 1855, in connection with the "fire annihilator," "crystal palace," the "herd of wild buffaloes," and other enterprises. At that time,

having built himself an extensive villa at Bridgeport, he retired from business, and soon published his life, giving a full account of the various enterprises in which he had been engaged. He also devoted much of his time to farming, and made many improvements in Bridgeport. During the year 1855, a celebrated "baby show" took place at the American museum, from which was also realized a large amount of money. Mr. Barnum, however, having made many unfortunate investments, found himself at the end of the year greatly involved; and the failure of an extensive manufacturing company, for which he had become responsible, brought his fortunes again to the lowest ebb. He finally succeeded, in the latter part of 1857, in compounding with his creditors, and in regaining the management of his own affairs.

BARNWELL, a district in the S. W. part of South Carolina, bordering on the Savannah river. It has an area of 1,550 sq. m. The surface is hilly, but not rugged; the soil productive, in the tracts contiguous to the rivers. The county is separated from Georgia by the Savannah river, which is navigable for steamboats. The district is crossed by the South Carolina railway, which extends to Charleston. The staples are Indian corn, cotton, potatoes, and live stock. In 1850 the productions amounted to 10,138 bales of cotton, 889,629 bushels of Indian corn, and 168,864 of sweet potatoes. There were 56 churches, and 450 pupils attending public schools. Pop. in 1850, 26,608, of whom 12,600 were free, and 14,008 slaves.—**BARNWELL COURT HOUSE** is the capital of Barnwell district. It is situated on the Salkehatchie river, 55 miles directly S. S. W. from Columbia. It is the entrepot for a productive cotton district. It contains the public buildings of the district and several churches.

BARO, a river of Africa, rises S. W. of Abyssinia, lat. 8° N., in an extensive plateau, where, also, begin the tributaries of the White Nile. The natives represent it as a very large river, the banks of which are inhabited by Shankalabs, and frequented by herds of elephants.

BAROACH (ancient Barygaza), capital of a district of the same name, on the Nerbudda, 36 miles N. of Surat; pop. 83,000. It exports cotton, grain, and seeds to Bombay and Surat. It contains a Braminical hospital for sick animals, into which even insects are received. Area of the district, 1,351 sq. m.; pop. 239,567.

BAROCCIO, or **BAROCCI**, **FIORI FEDERIGO**, a painter of the Roman school, born at Urbino, in 1528, died there, Sept. 31, 1612. In his youth he studied the works of Titian, and, in 1549, went to Rome to see those of Raphael. In 1560 he was intrusted by Pius IV. with the decoration of the Belvedere palace, and some of the Roman painters, envious of his genius, invited him to a banquet, where they gave him poison. For 4 years he was not able to touch his pencil, and afterward could only work 2 hours a day. His later pictures are in the style

of Correggio. His "Last Supper," "Descent from the Cross," "St. Francis stigmatized," "Christ and Magdalen," and "Annunciation," are among his best productions.

BAROÛHE, **PIERRE JULES**, French jurist and statesman, born at Paris, Nov. 8, 1802. As early as 1823 he became a successful advocate. He defended Colombier, charged with being an accomplice of Quénisset, the would-be assassin of the duke of Anmale, and Despans-Cubières, indicted for taking part with Teste and others in certain corrupt transactions. In 1847 he was sent by the department of Charente to the chamber of deputies, where, on Feb. 28, 1848, he signed, with several others, the act of impeachment, presented by Odilon Barrot, against the Guizot cabinet, for illegally prohibiting the reform banquet in the 12th arrondissement of Paris. Being elected a member of the constituent assembly, he was most emphatic in his declarations of fealty to the republic, but soon leaned toward the Bonapartists. Re-elected to the legislative assembly, in May, 1849, he was made home secretary, March 15, 1850, and, a few days later, changed this post for that of secretary for foreign affairs. He favored the *coup d'état* of Dec. 2, and, on the establishment of the empire, was appointed to the vice-presidency of the council of state, which he still holds. The government of Napoleon III. has few more devoted adherents. As one of his ministers of state, his name figures among the privy council, nominated by imperial decree of Feb. 1, 1858, for the purpose of forming a council of regency, in the contingency of the emperor's death.

BARODA, a city of Hindostan, pop. 100,000, 78 miles N. N. E. of Surat. It is double-walled, and has 4 spacious streets, which terminate centrally in a market place. It has been called one of the "richest cities, in point of moneyed and commercial capital, in India."

BAROMETER (Gr. *Baros*, weight, and *μετρον*, a measure), an instrument used for determining the pressure of the atmosphere. By the variations of this pressure at different heights, it is also applied to determine differences of altitude. The doctrine of a *plenum* in natural philosophy, and the abhorrence of nature for a vacuum, had long been too fully established in the old systems, for the possibility of producing a vacuum to be admitted, when Galileo, toward the close of his life, was applied to, to explain why water could not be raised in a vacuum pump more than about 32 feet. Whether he succeeded in comprehending the true solution is somewhat doubtful, but at any rate, he was led to admit, that nature's abhorrence of a vacuum did not exceed the pressure of a column of water 32 feet high. Subsequently, as mentioned in the last of his dialogues, he devised an experiment to ascertain the power or *virtù* of a vacuum. This consisted in applying weights to a piston closely fitting in a smooth tube, placed in an inverted position, to see how much would draw it down, and previously to his death, which

happened not long after in 1642, he recommended to his pupil, Torricelli, to continue these investigations. The decisive experiment, made by Torricelli, and called after him the Torricellian experiment, was in ascertaining the length of a column of mercury, sustained by the same cause, whatever it might be, which supported the column of water. The weight of the mercury being about 14 times greater than that of the water, the height of the 2 columns, he reasoned, should be proportional to their weights. Filling a glass tube, 8 feet or more in length, with mercury, and closing the open end with his finger, he introduced this by inverting the tube, under the surface of mercury in a basin. Over the mercury in the basin was also a quantity of water. On removing the finger, the mercury in the tube sunk down, and after oscillating, stood at about 28 inches above the surface of that in the vessel, leaving in the upper end a vacant space. Raising the tube, so that its lower end terminated in the water, which occupied the upper part of the basin, the mercury in the tube all ran out, and the water rushed up filling the whole tube. Torricelli continued his experiments, and discovered the fluctuations in the height of the column of mercury caused by the changes of the weather; and in 1645, an account of his observations was published; but he soon after died, before his great discovery was fully completed.—The subject was taken up with great zeal by Pascal at Rouen, in France. Although at this time not quite 24 years of age, he was already distinguished for his original philosophical investigations. In 1646 he performed a number of experiments, with tubes of glass, some of them 50 feet in length. These led him to the conclusion, slowly and cautiously arrived at, that an absolute vacuum may be formed. It occurred to Pascal that if it were the atmospheric pressure which supported the column of mercury or water, the height of the column should be lessened, as the pressure is reduced by ascending to greater elevations above the surface. He communicated his views to his brother-in-law, Périer, who lived at Olermont, in Auvergne, near the high conical mountain of Puy de Dôme, with the request that he would test the theory upon this elevation. This was not accomplished, however, till Sept. 19, 1648. Périer at this time, provided with mercury and tubes, observed in the garden of a monastery in the lowest part of Olermont, the height at which the mercury stood in 2 tubes, which was 26 French inches and $8\frac{1}{2}$ lines. Leaving one of the barometers to be noticed in his absence, he took the other up the mountain, and at the summit, to the surprise and delight of himself and of those who accompanied him, he found the height of the column was only 28 inches and 2 lines. At lower points, he noticed, as he descended, the mercury rose in the tube, and at the base it occupied the same space in the tube as at first. This was the first observation ever made upon the different pressures of the atmosphere at dif-

ferent elevations. Périer repeated the experiment upon the highest tower of Olermont; and Pascal on learning the result, at Paris, where he then was, made similar observations upon the top of a high house and the belfry of a church. Satisfied with the results, he soon proposed this process for determining differences of elevation.—Attention began now to be directed to the variations in the height of the mercurial column caused by the atmospheric changes. Otto Guericke, an ingenious and wealthy burgomaster of Magdeburg, contrived a gigantic barometer for indicating the state of the weather. It was a glass tube nearly filled with water, 80 feet in length, placed within the wall of his house, and rising above the roof, the lower end terminating in a cistern of water. In the upper part, which was of larger dimensions than the rest, was placed the figure of a man, large enough to be visible from the street. In fine weather this figure, floating upon the surface of the water, appeared in full size above the roof; but as the fluid subsided with the change of weather, the manikin withdrew into the building. The contrivance is said to have excited great admiration among the inhabitants of Magdeburg, but mingled with some doubts, whether the worthy burgomaster was not upon too intimate terms with the powers of darkness.—From the original invention of the barometer to the present time, the ingenuity of the most distinguished men of science has been exercised in improving its construction. Numerous modifications of its form have been contrived, and yet those now most approved are but slightly varied from the straight inverted tube of Torricelli, and the siphon tube also proposed by him. The liquid selected by him is still preferred to all others by reason of the required weight of it occupying so little space. It is also not liable to be volatilized by slight elevations of temperature, and thus fill with its vapor the vacant space in the top of the tube. The simplest form of the instrument is that called the cistern barometer. The straight tube of Torricelli terminates at its foot in a cistern of mercury. By the rising and falling of the liquid in the tube, the level of that in the cistern must change. The absolute height of the mercury, therefore, does not give the height of the column, as supported by the atmospheric pressure, unless correction is made for the error thus introduced; an error which is reduced according as the diameter of the cistern is made greater than that of the tube. There are several methods of making this correction; one is in rendering the scale movable, and bringing its zero point always to the surface of the mercury in the cistern; another in making the scale fixed, and bringing the mercury to its zero point by means of a screw, which is made to press against a flexible bag that forms the lower part of the cylinder; and a third method, which, however, is not much in use, is in making the spaces upon the scale less than those they are called by such a fractional part as the number of times which

the area of the cistern exceeds that of the tube—thus, if the area of the cistern is 20 times that of the tube, the inches are made one-twentieth less than their true measure. The second method is the most generally adopted in the best instruments. Troughton's portable barometer is of this construction. Its graduated scale commences at 15 inches above the neutral point, and is continued as high as 33 inches. By means of a sliding vernier, this scale may be read to the $\frac{1}{1000}$ of an inch. Though various contrivances have been suggested for taking the place of these minute divisions and vernier readings, as by enlarging the scale, &c., no substitute has yet been found to give such good results. By a skilful observer they can be read with great minuteness, and much within the limits of accuracy of the instrument in other respects. The barometer adopted by the Smithsonian institution is that of Mr. James Green, of New York. A full description of this, with the drawings that are required to render it intelligible, is published in the 10th annual report of the institution. In the same article are also directions for the use of the instrument; and in a preceding part of the same report are more detailed directions for making barometrical observations. Green's barometer is remarkable for the manner of constructing the cistern of boxwood from rings all made from the centres of the wood and concentric with its growth. They are worked thin; then the pores of the wood are deprived of air by exhaustion, and filled with shellac. The joints are fitted with perfect accuracy without cement, the use of which, or of iron, is a defect in other cistern barometers. A method is introduced of correcting for capillarity by making the scale movable, so that its 30 inch mark may be set to coincide with a fixed mark upon the tube, which is exactly 30 inches above the tip of the ivory point to which the surface of the mercury is always to be brought before making an observation. The instrument is designed for service as a mountain barometer as well as for stationary uses. The siphon barometer of Gay-Lussac, improved by Bunten, of Paris, is a very portable and convenient form for the use of the scientific traveller. The name siphon is applied to barometers of which the lower end of the tube is turned up to form a short arm, which constitutes the cistern, and may be left open for the air to press directly upon the mercury. A capillary opening in this short arm, which is otherwise tight, answers the same purpose as if the whole were open. The surface of the mercury in the lower arm corresponds to the zero point in the cistern barometer, and as this fluctuates as well as that of the longer limb, it is necessary to use a vernier at each extremity of the column, and take the 2 readings in order to determine the height of the column. If the 2 limbs were made of precisely the same diameter, the reading of one and doubling this would give a correct result. In Gay-Lussac's barometer the tube at each ex-

tremity is of the usual diameter, but in the elbow, and along the lower part of the long limb, it is drawn down to a very small bore. The instrument is thus made to occupy very little space, so that the glass is enclosed in a brass cylinder of the size of an ordinary cane. An open slit at each end of the brass tube affords an opportunity of reading the verniers, the indexes of which traverse up and down these openings by means of toothed wheels which run in a rack made upon the edge of the brass. The improvement introduced by Bunten is in dividing the long limb into 2 parts, the upper one of which is drawn down at its lower end to a small opening and inserted into the lower portion, to which it is attached, making again one tube. The object of this conical projection of the upper into the lower part is to form a chamber or trap to catch any air, which may be accidentally introduced through the short branch, and thus intercept its passage to the vacuum, where by its elasticity it would counterbalance to some extent the pressure of the external air. As the barometer is inverted the air lodged in the air-trap escapes through the short branch by which it entered.—A barometer is, in common use, provided with an index which turns around upon a dial, and points to figures which indicate the height of the mercury, as also to words descriptive of the state of the weather, as "cloudy," "fair," "rainy," &c. The index is made to move by means of a string, which passes around its axle, and has at each end a weight attached, the larger one resting upon the surface of the mercury in the shorter limb of a siphon barometer. This is open to the objection of this barometer, giving in the reading of one limb but half the actual effect; but as the length of the index is several times greater than the radius of the pulley upon its axis, this objection is really more than counterbalanced. Still, little confidence is placed in its accuracy in marking the true variations of the column, and none whatever in its indications of the state of the weather, for the barometer does not designate by the absolute height of the mercury, but by its rising or falling, the kind of weather we may expect, and this change is not indicated by the index. The instrument is usually described, among other barometers, as a toy or a handsome piece of furniture.—In filling a tube with mercury, particular care is required, that no air be introduced, which, by occupying the vacuum, will counterbalance in part the pressure of the external air, and cause incorrect results. The mercury, too, is required to be free from mixtures of other metals, and of its own oxide. It is introduced into the tube in small quantities at a time, and boiled as each portion is added, the heat being applied to that part of the tube containing the mercury last introduced. By boiling the mercury in the tube in *vacuo*, the air and moisture are most effectually expelled. On inverting the tube when properly filled, its lower end being kept in a basin of

mercury, the column sinks to the proper level to counterbalance the atmospheric pressure. When the operation has been successfully completed, the column of mercury presents a bright undimmed appearance, and emits flashes of electrical light in the vacuum above, on the column being made to vibrate in the dark; and a perfect vacuum is indicated by the clicking sound of the mercury, when it is allowed to strike the top of the glass tube; still the electrical light is supposed to be dependent on a small quantity of vapor left behind in the vacant space of the tube; however, in several instances it has been observed that the mercury remains suspended in the tube when this is inverted, even if the lower end be not placed in a cistern of the metal. It is detached by a sudden jar. This adherence of particles of mercury with such force is an obscure property of this fluid. It tends to introduce errors in estimating the true height of the column. Instead of forming at the top of the column a concave surface by the particles adhering to the glass and climbing up its surface, as water and other fluids do by the property called capillarity, the mercury takes a convex form, and its contact with the glass is lower than it should be. The smaller the bore of the tube, the greater is this depression and the error involved; but in a siphon barometer, the error of one convex surface of the mercury in one limb is counteracted by the same effect from that of the other. As the mercury becomes oxidated by time, the convexity is lost, and the surface of the fluid even assumes a concave form like water in a tube.—However well constructed and filled, all barometers are liable to vary, after years of use, by a partial oxidation of the mercury, producing a thin film, which attaches itself to and obscures the inner surface of the tube. This film can be removed only by cleaning and refilling with fresh mercury. It has been thought that air was liable to creep around the bottom of the tube, and gradually enter into the vacuum, producing in the best instruments effects that were only perceived after a series of years, and that all instruments used for a long period must show a less height in the latter than in the former part of the period. The experiments, however, that seem to confirm this opinion, are not yet regarded as fully establishing the fact; and though an ingenious contrivance has been devised by Prof. Daniell, of fixing to the open end of the tube a ring of platinum for intercepting and turning back the air, it is not now introduced into the best instruments. Prof. Daniell also constructed the most perfect water-barometer ever made, which is somewhat similar to that already noticed of Guericke at Magdeburg. It is fixed in the hall of the royal society at Somerset house. The tube is of glass, 40 feet long, and an inch in diameter. The water in it stands at an average height of 400 inches above the fluid in the cistern. A layer of a solution of caoutchouc in naphtha upon the water in the cistern

prevents access of any air to the tube. The column is sensitive to continual changes of pressure in the atmosphere, which do not affect other barometers. In windy weather it is in perpetual motion, vibrating up and down almost with the regularity of respiration. It indicates the horary oscillations of the pressure an hour sooner than does the mercurial barometer of half an inch bore.—In the use of barometers, it is often desirable to have their variations recorded without the necessity of frequently observing them. Several methods have been devised of rendering them self-registering. The best apparatus of this kind is that of Mr. Bryson, formerly a watchmaker of Edinburgh. Upon the mercury in the lower limb of a siphon barometer is placed an ivory float, which carries outside of the tube a knife edge. This, by proper machinery, is made to touch once every hour the surface of a vertical cylinder, which revolves with uniform motion once in 24 hours, and upon the face of which are marked spaces corresponding to the hours of the day and night. A new cylinder is used each day. The marks are made upon a coating of fine chalk and water laid on with a camel's-hair brush. The arrangement is much preferable to the other self-registering barometers, in which the float is made to carry a pencil, that marks upon any surface, fixed or revolving, its own elevations and depressions, as this contrivance involves continual friction and other causes of irregularity and incorrect results. A more perfect arrangement still is to secure the registration by the photographic process, as is done in the British national observatory at Greenwich.—Account should be taken of the temperature at the same time that the observations of the barometer are noted; for the height of the column, as in the thermometer, must vary with change of temperature, as well as by change of atmospheric pressure. Allowance for the cause of variation it is particularly important to make, in observations for determining elevations, and a thermometer is always attached to the barometer for this use. Between the points of boiling and freezing it is found that the space occupied by mercury amounts to one fifty-fourth of its bulk. For each degree of heat by the centesimal scale its volume increases $\frac{1}{54}$; by Fahrenheit's thermometer, $\frac{1}{18}$. Though little reliance can be placed upon a barometer, as indicating by any single observation the condition of the weather, its fluctuations, caused by changes of atmospheric pressure, may, when carefully noticed, often serve to foretell the effects that must still ensue. Thus, a sudden and long-continued fall is regarded as a sure sign of an impending storm. A fall to 29.60 inches, off the Cape of Good Hope, was found by the observations of Capt. Basil Hall, made in May, 1815, to be succeeded by a storm, even though there was no previous change betokening this. Many instances are recorded of vessels being saved by the precaution taken, in consequence of the warning of the barometer.

rometer at the immediate approach of most terrible hurricanes, of which no other notice was given. The best rules for prognosticating the state of the weather from the barometer are those quoted by Dr. Brande from the "Saturday Magazine:" 1. After a continuance of dry weather, if the barometer begins to fall slowly and steadily rain will certainly ensue; but if the fine weather has been of long duration, the mercury may fall for 2 or 3 days before any perceptible change takes place, and the longer time elapses before the rain comes, the longer the wet weather is likely to last. 2. Conversely, if, after a great deal of wet weather, with the barometer below its mean height, the mercury begins to rise steadily and slowly, fine weather will come, though 2 or 3 wet days may first elapse; and the fine weather will be more permanent in proportion to the length of time that passes before the perceptible change takes place. 3. On either of the 2 foregoing suppositions, if the change immediately ensues on the motion of the mercury the change will not be permanent. 4. If the barometer rise slowly and steadily for 2 days together or more, fine weather will come, though for those 2 days it may rain incessantly, and the reverse; but if the barometer rise for 2 days or more during rain, and then, on the appearance of fine weather, begins to fall again, that fine weather will be very transient, and *vice versa*. 5. A sudden fall of the barometer in the spring or autumn indicates wind; in the summer, during very hot weather, a thunder-storm may be expected; in winter, a sudden fall, after frost of some continuance, indicates a change of wind, with thaw and rain; but in a continued frost a rise of the mercury indicates approaching snow. 6. No rapid fluctuations of the barometer are to be interpreted as indicating either dry or wet weather of any continuance; it is only the slow, steady, and continued rise or fall that is to be attended to in this respect. 7. A rise in the mercury late in the autumn, after a long continuance of wet and windy weather, generally indicates a change of wind to the northern quarters and the approach of frost. After all, however, no set of rules can have a general application. Each district has its own peculiar atmospheric conditions, and these being understood by long-continued observations, the variations of the barometer may then be observed with some degree of confidence.—Barometers have been constructed with particular reference to use at sea, of which those of Mr. Carey of London are much used. The tube is about 27 inches long; with a bore scarcely exceeding $\frac{1}{16}$ of an inch. Its upper end terminates in a cylinder 4 or 5 inches high, nearly $\frac{1}{8}$ of an inch in diameter. It is suspended by a spring and gimbals near the top, at a point determined in each instrument by actual trial. The object of the larger bore above the capillary tube is to prevent a rapid flow of the mercury, which might be caused by the motion of the ship, and break the tube by its striking against the top. The form

is liable to the objection that the rise and fall of the fluid is necessarily very slow, and several minutes may elapse before a sudden change of atmospheric pressure is indicated.—The cause of the shifting pressure of the atmosphere is to be looked for in the operations of the winds which may be blowing in distant localities. By drawing the air away from any point, the pressure is here, to some extent, taken off, which must soon be filled by a rush of air from other sources. Where the winds are equable, like the trade-winds of the tropics, the movements of the barometer partake of the same regularity. Humboldt, in his researches in the equatorial regions of South America, was greatly struck by the uniformity of the motion of the barometer in the different periods of the day. From 4 o'clock in the morning till 10 the mercury generally rises, and then falls until 4 in the afternoon. It then rises again till 10 at night, after which it falls till 4 in the morning. In temperate northern latitudes the barometer generally stands higher at 9 A. M. and 9 P. M. and lower at 3 A. M. and 3 P. M. than at other hours. Professor Daniell recommends these hours, as the best times for consulting the barometer as a weather-glass. Its rise between 9 A. M. and 3 P. M. indicates fine weather. A fall from this time to 9 P. M., is likely to be followed by rain. Periodic changes of pressure are observed to occur at certain periods of the year. These may be seen, by consulting a manual of Mr. Belville of the royal observatory, published in 1849, in which are recorded the mean heights of the barometer at noon for Greenwich, from the year 1815 to 1844. By these tables it appears that "the greatest daily mean pressure for the year occurs about Jan. 9; the minimum daily mean depression toward the end of November. It is a remarkable coincidence, that the lowest daily mean temperature for 30 years occurs on Jan. 8 and 9, and the daily mean temperature for November, rises suddenly 4° in the last few days in November." The mean annual pressure for noon at Greenwich is 29.872 inches. In 38 years between 1811 and 1848, the maximum elevation occurred in 1825, being 30.89 inches; in 1821, it reached 30.82 inches; in 1885, 30.84 inches, and in February, 1849, 30.86 inches. On Dec. 25, 1821, the greatest depression occurred of 27.89 inches. A heavy rain and south-east wind had preceded this, and a gale from the north-west followed. In 1814, the greatest depression was 28.21 inches. This was at the close of the great frost, and was preceded also by much rain and a stormy wind from S. S. E. The barometer has been recorded at a height of over 81 inches at Cambridge, Mass., at the temperature then existing.—Lieut. Maury, of the national observatory, Washington, in a communication to the secretary of the U. S. navy, dated Feb. 10, 1858, mentions the discovery of the numerical relation between the force of the wind and the difference of simultaneous barometric pressures at certain stations, by Professor Bays Ballot, of

Holland. From this relation rules have been deduced by which the maximum force of the wind during the day may be predicted every morning, thus enabling outward bound vessels to determine the safety of putting to sea at noon or in the evening. Lieut. Maury recommends the application of these rules to increasing the safety of navigation on the lakes of the United States.—Barometers are also in use which are constructed upon other principles than that of the rise and fall of a column of mercury. Two which will require particular notice are the **BORNING POINT BAROMETER** and the **ANEROID BAROMETER**. The principle upon which the action of the former depends is the variable temperature at which water boils at different elevations, or, what is the same thing, under different atmospheric pressures. The instrument is constructed with a small cistern for the water, arranged in a cylindrical tin tube, which contains in the lower part an alcohol lamp for heating the fluid. The temperature is best noticed by suspending the bulb of the thermometer in the partially confined steam, which rises from the boiling water. The difference in the temperatures observed at 2 different points expressed in degrees of Fahrenheit's thermometer, being multiplied by 580, will give the approximate difference of elevation between these 2 points. For greater accuracy correction should be made for the difference of the temperature of the air at the 2 places, as follows: From the sum of the temperatures of the air at the 2 stations subtract 64, the remainder multiplied by the one-thousandth part of the height found, is the correction to be added to this height. Another addition of about 2 feet in 1,000 is to be made for the figure of the earth and the latitude in temperate regions. Although the instrument is made in a very portable and convenient form, it has not proved a favorite with scientific observers, from a want of confidence in its results. Regnault's formula for its use is $h=585 T$; h being the height in English feet, and T the fall of the boiling point from 212° . This gives nearly the same results for all heights up to about 12,000 feet, as Professor Forbes's formula, $h=517 T+T^2$.—The **ANEROID BAROMETER** (Gr. *aneros*, and *eidos*, a form without fluid) is a modification of the vacuum case barometer, the earliest form of which was invented by M. Conté, professor of the aërostatical school at Mendon, near Paris, and described by him in the *Bulletin des sciences*, Floreal, An 6, p. 106. M. Conté in his balloon ascents found the reading of the mercurial barometer subject to the same difficulties so much complained of on ship-board, arising from the violent oscillations of the instrument. He therefore invented a watch-like, metallic, airtight vacuum case, the lid of which sustained by internal springs rose and fell under the variable pressure of the atmosphere, an index showing the motion. But as the size of this metallic case varied under the variations of the temperature at different heights from the earth's

surface, the instrument was found to be useless. M. Vidi subsequently devised a case of different form, with a flat corrugated top and bottom, flanged over and soldered to a rim, first pressed together at the centre by the withdrawal of the enclosed air, and then separated a certain distance by the introduction of a compensating gas, the expansion and contraction of which under various degrees of temperature was meant to correct the opposite contraction and expansion of the case. The instrument thus improved and constructed by Dent of London, has come into extensive use. Mr. J. H. Belville of the royal observatory, Greenwich, in his "Manual of the Mercurial and Aneroid Barometers," gives a favorable account of its working during an excursion which he took into Wales, in the summer of 1848. He describes it as a flat circular box, made of some white metal, exhausted of air through a short tube, subsequently soldered tight; the upper and lower surfaces corrugated in concentric circles, to give them greater elasticity; the bottom fixed to the bottom of a metallic case, which encloses the whole mechanism; from the centre of the upper surface rises a solid cylindrical socket half an inch high, to take hold of the middle portion of a T shaped cast iron lever, the T end of which rests on two knife edges in line, and the other upon the end of a flat spiral spring, held to the bottom of the outside case by a screw; this latter end is also attached to a small lever drawing on a watch chain round a drum upon the arbor of the index hand, the chain being kept tense by a hair spring. As the weight of air presses in the corrugated lid of the vacuum box, the socket draws down the great lever upon the spiral spring, and compels the small lever to draw on the watch chain against the hair spring and so turns the index hand upon the dial plate to the right. When the pressure is taken off, the levers give and permit the hair springs to carry the index point round back to the left. The tension of the box is equal to 44 lbs. The screw head coming through the back of the outside box adjusts the force of the spiral spring and sets the hand at any required datum. The scale on the dial plate read by the index point agrees with the inch scale of the mercurial barometer. It would perhaps have been better to have made it a scale of pounds' weight of atmosphere, as by this arrangement a comparison of the aneroid and mercurial is easy.—The practical utility of the best of Dent's aneroids, especially of some lately made, of a size 8 inches across the dial plate, is confirmed by testimony: this side the Atlantic; although the coast survey and the Smithsonian institution have pronounced against them. Their objections, however, it is thought, do not apply to their use in the hands of practical surveyors, topographers, civil engineers, artists, travellers, and sailors. Mr. Osburn, chief engineer of the Catawissa road, has used the aneroid for 5 years, with intermission in every variety of reconnaissance

and preliminary location lines, and pronounces emphatically in its favor. Mr. J. P. Lesley, formerly of the Pennsylvania geological survey, has used aneroids of different sizes and make, in elaborate topographical surveys of western Pennsylvania, for the maps of the Pennsylvania railroad, and in all his geological surveys, for a number of years, and says in his "Manual of Coal and its Topography," p. 199, that he gives it his unqualified approbation and affection. It requires to be carefully handled, but the rules to be observed are few. "No observations more than 5 minutes apart are to be compared without repetition; no observation is to be made at a station until time has been allowed the instrument to come to rest, especially when an ascent is changed to a descent, and *vice versa*; all observations immediately followed by a thunder storm are to be held of subordinate value; all lines of level run with the aneroid are to be made to pass across from one to the other and tie at both ends with two parallel lines of spirit levelling." These rules observed, the results of aneroid practice with the best and latest instruments are good; for practical topography unexceptionable. No instrument, however, that he has used has been actually self-compensating for temperature. Each instrument requires a table of compensations, and what is of more moment, a separate table made out by careful experiment with and for itself; the tables published in Dent's pamphlet and elsewhere are practically worthless. Some instruments are nearly or quite self-compensating within ordinary working limits, say 2,000 feet, while others require an allowance of even 5 feet vertical for every degree the thermometer attached to the dial of the aneroid rises or falls. The observer must therefore learn to know his instrument well, or he can do nothing with it on an extended survey. It is evident from this that an aneroid may work very well one day and fail the next. This has condemned the instrument with most field workers; but the fact only calls for greater attention to the laws of its perturbations. It is proper to provide the one instrument carried along the line of a survey, with another mate instrument, well adjusted to it and fixed at a near station, and observed by an additional member of the party, periodically, at short intervals throughout the day. With this precaution, levelling with a good aneroid will equal for all practical purposes, in the long run of an extensive survey, levelling with the ordinary spirit level. Of course the aneroid can be of no service in the high geodesy of a coast or ordnance survey. In civil engineering, on the contrary, up to the final location line, it is reasonable to expect from the testimony given in, that it will almost replace the spirit level. In geological examinations it is invaluable. The geologist in tracing outcrops through the woods and where the rocks are entirely concealed, across ravines, and over the shoulders of hills, in a broken country, has only to discover and take the di-

rection of the line of strike, to know by the infallible rise or fall of the index hand to the level of the point of his departure, precisely when he is passing up or down, over the outcrop of his bed. In countries where the rocks are nearly or quite horizontal, in fact over half the United States, the aneroid is to the geologist a whole corps of assistants, and the work of a week can, with its help, often be done in a day. There is an external index to assist the memory of the house observer from one observation to another, but this is of no use in the field, and should be removed, as it is always in the way, and occasionally causes the breakage of the glass. The aneroid should always be observed by the field worker in its box raised horizontally on the tips of the fingers and thumb of the left hand to a level with the eye, the point of the index toward the eye. The eye then will range above the index and project its point vertically upon the scale. These precautions are needful, first, because any strain upon the outer brass case (as made by the present patentee) acts mischievously upon the machinery within, and can alter the reading of vertical heights 50 or even in some instruments 100 feet; and secondly, because the index is usually adjusted so rudely through the dial plate that a near approach of its point to the scale is impossible, and therefore the angle at which the reading is made may give a large error of perspective. A little practice will obviate both these difficulties; but it is to be hoped that on the expiration of the patent the construction of the instrument will be greatly improved without a material enhancement of its price, and leave little to be desired in the way of accuracy in its practical manipulation.—The thermometric compensation is more difficult to make, but when the scale is once made out for the given instrument, the only rule left to observe is this: in summer heat your instrument, and in winter cool it slowly to about the temperature of the air you intend to work in; and during work, do not expose it alternately to the sun and to moist cool shades; for the thermometer on the dial plate shows a change before the machinery within feels it. For this reason it is prudent to carry the instrument in its lined wooden box, and always shut.

BAROMETRICAL MEASUREMENTS. By the perfection now attained in the construction of barometers, and the skill applied to their use by the best observers, differences of elevation may be ascertained by them with greater accuracy than by the most carefully conducted triangulation—at least, in places where the elevations are great and difficult of access. High summits, covered with shifting clouds, involve uncertain errors, arising from constantly varying refraction; and inaccessible mountains can only be observed under very small angles from the termini of a carefully constructed base line, in some smooth district, at a considerable distance from them. A comparison of results obtained by both methods is generally in favor

of the barometer. Humboldt noticed this, particularly in the numerous measurements that had been made of the peak of Teneriffe, and, in determining this elevation by the mean results of the various observations, he rejected 8 out of 9 geometrical measurements, and only 1 out of 4 barometrical measurements. Both modes, however, are capable, in many localities, of a great degree of accuracy, as is shown in the 2 measurements of Mt. Washington, the 1st by Prof. Guyot, with the barometer, and the 2d by the officers of the coast survey, in which the difference was only 8 feet in the height of 6,285 feet, determined by Prof. Guyot. To insure the greatest degree of accuracy, it is essential to use 2 good barometers, one at the lower and the other at the upper point. If only one be employed, there is a liability of error from a change of atmospheric pressure taking place during the time spent in passing from one station to the other. These barometers should have been carefully compared by many observations, and the mean of their variation noted, to be always allowed in the calculation. They should also have been compared with other barometers of known character, and their differences with these noted, and this comparison should be repeated after their use, in the same way as chronometers are compared, and their rates noted, before and after a voyage. Repeated observations should also be made at both stations at the same times, and the mean of all be taken, unless some show good reasons for their rejection. It is also important that the 2 stations be not very far apart. In a distance of 40 or 50 miles there may well be varying conditions of the atmosphere that cause a difference of pressure not due altogether to the difference of elevation. This cause of error may be avoided by using intermediate stations, and advancing step by step.—One point determined serves as the established base for determining the next beyond. In measuring the heights of the principal summits of the Black mountains of North Carolina, Prof. Guyot used as his starting point the level determined by a railroad survey, 7 miles distant from the nearest hill. The next station was taken half way to the summit, and, by repeated observations at both, continued during 2 days, the liability to error resulting from too great distance was avoided. So, also, was that from a faulty correction for temperature. This correction, as applied by the tables, amounts sometimes to 300 feet. But it supposes the actual temperature of the stratum of air between the 2 points to be represented by the mean of the temperature at the 2 places, and a moderate variation from this may well involve an error of $\frac{1}{4}$ or $\frac{1}{2}$ of the whole correction. Such a variation is not at all improbable where the difference of elevation is very great, as in the higher regions the decrease of temperature takes place more and more rapidly. The next station was the summit of the first hill, the height of which was ascertained by comparative observations made upon it and, at the same time,

at the 2d station. The different peaks were then compared one with another by observations made upon them in pairs. So exactly were these measurements conducted by Prof. Guyot, that, as he states, his single observations differed only two or three metres from the mean, and the mean of one day scarcely differed one metre (39 inches) from the mean of another. But for these precautions an error might have resulted in the determination of the first summit of 50 feet or more, such as Prof. Guyot found he was liable to in the course of his observations at the White mountains when the 2 stations were from 10 to 30 miles apart. As the distance between stations increases, the number of observations should also be multiplied, in order to obtain a correct mean. The barometers are to be carefully suspended, so that the column shall be perfectly vertical, and they should be placed in a situation not subject to sudden change of temperature. The reading of the height of the mercurial column is to be taken at the same time as that of the thermometer attached to the barometer, and also of the detached thermometer. If the instrument has been suspended for some moments, the 2 temperatures may not differ. When these observations are compared with those made at the same time at the other station, the calculations for the difference of elevation are usually made by the aid of the tables prepared by M. Olmanns. This is a much more simple process than calculating the difference by the theorem of Laplace, which gives the same result. If the instruments are graduated in inches, these must be turned into metres, and the temperatures must also be expressed in degrees of the centigrade thermometer. With the tables for these conversions and calculations are given very simple directions for their use, and applying the necessary corrections.—Some singular barometric anomalies are reported by Lieut. Herndon to have been observed by him in the vicinity of the Andes. At the eastern base he found the pressure measured by the boiling point of water, to be nearly as great as at the level of the sea. Having descended nearly 1,000 miles on to Amazon, the boiling point indicated an ascent of nearly 1,500 feet. Lieut. Maury explains this by referring it to the effect of the trade winds, which strike upon the flanks of the mountains and are banked up against the strata thus presented, as a current of water is interrupted by impediments in the channel, is piled against these. By the banking of the current of air an increased pressure is supposed to be exerted upon the surface at their base.

BARON (Gallic, *bar*, German, *bar*, *meis*, Latin, *baro*, early Spanish, *caron*, a man), was in the middle ages the possessor of an estate, and might have feudal tenants under him. In France the nobles in general were at first called barons, but subsequently the immediate representatives of the king received the appellation of *les barons*, or high barons. In Germany the barons were the highest nobility, who were

ward assumed the titles of counts and princes. In more modern times in both France and Germany a baron is a nobleman next in rank to a count. In England the original barons of the realm were those who held lands by tenure of suit and service to the king. They were bound to attend the king in his warlike expeditions, to supply money contributions on particular occasions, to furnish a military contingent proportioned to the extent of their fiefs, and to attend the king's courts. The barons were originally the great tenants of the crown, but various circumstances having increased the numbers of the barons holding direct from the sovereign, a practice arose, which became established about the time of Edward I., of summoning individuals by writ to the great councils. The barony by tenure and by writ being heritable, the inheritance of the titles became complicated by the devolution of the estates to female descendants, who, though incapable of holding titles, were nevertheless capable of transmitting them. From this, a practice arose of creating barons by patent, limiting the succession to heirs male. All noblemen were originally the king's barons, and *inter pares*, the question of precedence was one not always easy of settlement. The creation of dignities superior to those of barons—dukes, earls, marquises, and viscounts—to which some of the greater barons were raised, settled the question in part, and the antiquity of the particular title determined the precedence among those of equal dignity. Some other persons in England, as for instance the citizens of York and London, were styled barons, whose titles were drawn, perhaps, from the relation of suit and service in which they stood to the crown. The judges of the court of exchequer, a court instituted immediately after the conquest, are still styled barons.

BARON, MICHEL BOYRON, a French actor, born at Paris, Oct. 8, 1653, died Dec. 22, 1729. His mother, one of the most beautiful women of her time, acquired fame as an ambulating actress, and made such an impression upon the heart of his father, that the good man, who was a tanner by trade, not only married the fair lady, but also left his hide, and stooped himself to the stage. Subsequently he found employment at the royal theatre of the *ôtel de Bourgogne* at Paris, where young aron, who was a remarkably handsome fellow, soon attracted the attention and enlisted the sympathy of Molière, who engaged him for his theatre. He not only excelled in the tragic parts of Racine, but also in the humorous characters of his friend, Molière. In 1691 he left the stage with the intention of passing the rest of his days in the seclusion and the enjoyments of private life. For 28 years he withstood the temptations of the stage, but finally, in 1720, in his 67th year, he made his reappearance upon the boards; was received with the utmost enthusiasm, and, like *le Mars*, of later days, played youthful

characters. Like Molière, he was taken ill during one of his performances, and died almost before the echoes of the applause from the audience had ceased. His numerous comedies were collected in 1759, in 3 volumes.

BARON AND FEME, the Norman-French law term used to signify man and wife in the early English law writers.

BARONAGE is the collective term for the ancient nobility of England, in which sense it has been used by Sir William Dugdale in his great antiquarian work.

BARONET, an English title of honor. The baronet is the next degree, in point of precedence, below a baron. But the gulf between them is very broad. The baron is a peer of the realm, a hereditary legislator; the baronet is a commoner. The dignity dates from James I., and, according to Blackstone, was instituted by that monarch in order to raise a competent sum for the reduction of the province of Ulster, in Ireland, for which reason all baronets have the arms of Ulster superadded to their family coat. The candidates for the honor were required to be of gentle blood, and of adequate means to support the dignity; and it was promised that the number should not exceed 200, and that lapses by death should not be filled up. The promise on the part of the crown was soon abandoned, and this constitutes a standing grievance of the order. The old county baronets of England are usually held in much respect as representatives of ancient families, and of equal respectability in point of ancestry with the most noble houses. Sir Egerton Brydges traced his descent to Charlemagne. The baronets of Nova Scotia and of Ireland were created for similar special purposes.

BARONI, ADRIANA BASILIO, an Italian lady of the 17th century, celebrated for her beauty. Her praises were sung by most of the poets of her time, and the verses which she had inspired were, in 1623, collected and published in a large volume, under the title of the "Theatre of Adriana's Glory." Her daughter, Leonora, who was a singer and composer, possessed equal beauty, wit, and accomplishments, and met with equal admiration, her perfections being portrayed in a collection of pieces written in her praise, in 5 different languages.

BARONIUS, CESARE, an Italian ecclesiastic, born at Sora, in Naples, Aug. 30, 1533, died June 30, 1607. Having become a priest, he received the appointment of confessor and librarian to Clement VIII., and was soon after elevated to the rank of cardinal. In 1605, on the election of Clement's successor to the pontifical chair, he received 31 votes, and would have been chosen but for the opposition of the Spanish party, to whom he had given offence by denying the claims of the king of Spain to the sovereignty of Naples. His works are numerous and valuable; the most important being 12 volumes of ecclesiastical annals.

BARONY, the tenure upon which lands are held direct from the crown, or the lands or

lordship of a baron, for which the courts baron were held; or in Ireland, a particular territorial division existing from very ancient times.

BAROSCOPE, a name given by Sinclair of Glasgow to the Torricellian tube; soon superseded by the better name of barometer.

BAROZZIO DA VIGNOLA, GIACOMO, an Italian architect and author of great merit, was born at Vignola, in Modena, in 1507, and died at Rome in 1573. He studied painting with the Passarotti at Bologna, but seems never to have attained any reputation in that art. His studies in perspective, however, revealed a taste for architecture, which he wisely determined to cultivate; and for this purpose he visited Rome. At the invitation of Francesco Primaticcio, who came thither to collect antiquities, he accompanied him to France, and furnished numerous designs for buildings, which the troubled state of the times prevented from being built. Returning to Bologna, he constructed a number of fine palaces and public buildings, and finally settled in Rome. Vasari presented him to Pope Julius III., by whom he was appointed the papal architect. During this period he designed, beside other buildings, the church of the Jesuits, in Rome, and the Caparola palace, 2 of his most magnificent works, and the 2 lateral cupolas of St. Peter's, of which he was appointed architect after the death of Michel Angelo. He also designed the palace of the Escorial at Madrid for Philip II. Vignola wrote treatises on perspective and the 5 orders of architecture of great practical value. His style in architecture was a happy combination of grace, majesty, and strength.

BARQUESIMETO, capital of the province of the same name, republic of Venezuela; pop. 12,000; situated on a high plain, 120 miles W. S. W. of Caraccas. It was founded by the Spaniards in 1552. The soil of the neighborhood is very fertile. Coffee of excellent quality is grown here. The town is well built, and has wide streets. Previous to the earthquake of 1812, it contained 15,000 persons, but that calamity destroyed 1,500 lives, and left scarcely a house standing.

BARR, or **BARRA**, a small kingdom of western Africa, near the mouth of the Gambia, and extending along the northern bank of the river about 18 leagues, with a breadth of about 14 leagues; present population estimated at 200,000. This state was founded by a Mandingo warrior from the interior, who came with force sufficient to conquer the country, and afterward maintained himself by the help of weapons furnished him by Europeans in return for slaves. Of all the inhabitants the free Mandingoes constitute but one-fourth, the others being born in slavery, with some limitation, however, to the rights of the master. The Mandingoes are described as of superior size, well made, and industrious; they are shrewd in commercial affairs, generally hospitable, and all zealous Moslems.

BARRA (or **BARRY**) **ISLANDS**, a group of about 20 islands, forming a parish of the same name, on the W. coast of Scotland. They belong to the chain known as the outer Hebrides. The principal island, from which the rest are named, is about 12 miles long, and in breadth varies from 2 to 6 miles. It contains the ruins of several religious houses of very old date. At a place called Killbar are the remains of 3 churches, said to have been built by the monks of Icolmkill, and at various points throughout the island stand ancient watch-towers. Druidical circles are found in many places, and a dun or fort, supposed to have been built by the Scandinavians, is on every lake. In the middle of a beautiful bay, on a small rock entirely covered by the tide at high water, stands the ancient castle of the Mac Neils, the old proprietors of Barra. It is a rude, lonely mansion, but in former days was the scene of almost royal pomp and dignity. On Barra is the highest light-house in Britain. It is 680 feet above the sea.

BARRACK, a building for the lodging of soldiers. Barracks now ordinarily contain perfect accommodations for at least one regiment, with mess-rooms and quarters for the officers, non-commissioned officers and men, with kitchens, store-rooms, canteen, hospital; and if they be intended for cavalry, with stables, infirmary for sick horses, &c. Recently, great improvements have been made in barracks and the barrack system, especially in the French and English service, for the physical and mental amelioration of the condition of the men. Libraries, reading rooms, play grounds, for cricket, fives, and other manly exercises, being generally attached to them, and all means being adopted to induce the men to employ their leisure profitably, instead of idly or viciously in debauch.

BARRACKPOOR, an important military village, noted recently for the first manifestation of the sepoy rebellion of 1857, where also is the principal country residence of the governor general of India. It is situated on the left bank of the Hoogly, 10 miles by water and 16 by land, from Calcutta. Barrackpoor is irregularly built. Many of the houses present that imposing aspect from which Calcutta has derived its title of city of palaces. Most of them are bungalows, smaller than those of the upper provinces, but more carefully finished, and fitted up with a great degree of refinement. There is no esplanade, as on the river front of Calcutta and the neighboring towns Serampore and Chandernagore; but the houses are embosomed in lofty trees, and peep perquisitely through the branches of gigantic cecropias, and the richly wreathed pink acacias. The adjacent country is profusely wooded; its floral splendor unsurpassed in India; and the eye is refreshed on all sides with sylvan surprises, in nooks, vistas, and shady lotus tanks, and bamboo clumps. A principal object of attraction is the noble artificial park

of 250 acres, one of the most charming results on a grand scale of the art of landscape gardening in existence, where the stateliness of Asiatic proportions is joined to the picturesque of European design, and all the various charms of an undulating country artificially imparted to the natural flatness which characterizes the cantonments. Here is the governor general's famous collection of Indian zoology; and a stud of the largest elephants is maintained, principally for the recreation of the guests who from time to time are entertained at the vice-regal suburban residence. Barrackpoor is a favorite resort of all classes of people from Calcutta. Along the broad, embowered avenue of 16 miles, a various multitude of natives and foreigners are continually going and coming; for the strong tide renders water carriage difficult, and drives most of the small traffic to the land route.—In accordance with the policy of the East Indian government, to separate soldiers from citizens as much as possible, the infantry garrison of Fort William is stationed at Barrackpoor, as the artillery is at Dum Dum, 8 miles nearer the capital; and a detachment is detailed by monthly rotation for duty in the fort. In 1824, a regiment of Bengal sepoy, stationed at Barrackpoor, being ordered to Jhittagong, for duty in Burmah, refused to march, separated from their officers, quitted the lines, marched to the race course, with 40 pounds of ball cartridge in their pouches, and vowed their determination to resist any attempt to reduce them to obedience. Two King's regiments at once attacked and put them to flight; 70 were killed, and all abandoned their arms; of the prisoners the more important were summarily hung. Several other regiments were more or less actively implicated in the mutiny. On Jan. 24, 1857, the first low in the great revolt was struck by the sepoy of Barrackpoor, who burned the telegraph station. Barrackpoor was then occupied by native troops exclusively, of whom there were 4 regiments in cantonments, there being but 1 British regiment within 400 miles. The insurrection spread so fast, and assumed so formidable an aspect, that by the middle of February, Gen. Hearsey found it necessary to muster the troops at Barrackpoor and harangue them. On Feb. 24, a small guard, detached from the 34th regiment at Barrackpoor, reached Berhampoor, 120 miles from Calcutta, and extended to mutiny the sepoy of the 19th, then stationed there, who rose with fierce threats in the night, and were with difficulty controlled by the prompt measures of their officers and a body of superior force. Meantime, the main body of the 34th, at Barrackpoor, committed the first act of violence against a British officer. Mungul Pandey, a sepoy of the 34th, came on parade with a loaded musket, and traversed the lines, calling on his comrades to rise and kill their officers. When Lieut. Baugh, the adjutant of the regiment, rode up to arrest him, Mungul Pandey took deliberate aim at him

from behind a cannon, and fired; but only succeeded in bringing down his horse. Lieut. Baugh snatched a pistol from its holster and fired at the man, but missed him. Before he could draw his sword, Mungul Pandey felled him to the earth with the butt of his musket. The guard was close at hand, but refused to interfere. The sergeant-major, an Englishman, called on them to protect the adjutant, but their lieutenant forbade them to stir; and Mungul Pandey fired again, wounding the sergeant-major. When both officers were down, several sepoy of the guard beat them with their muskets. A Mohammedan sepoy then rushed forward and arrested Mungul Pandey, and Gen. Hearsey appearing on the ground, revolver in hand, prevented further violence at that time. Mungul Pandey, and the sepoy officer in command of the guard, were hanged; the loyal Mohammedan was promoted and decorated on the spot; and the 19th regiment from Berhampoor, being shortly afterward marched down for the purpose, was disbanded at Barrackpoor.

BARRAGAN, MIGUEL, a Mexican general and president of Mexico, supposed to have been born about 1781, died at Mexico in 1836. Little is known of his early history. He was of humble parentage, and was first heard of as commandante general of the state of Vera Cruz in 1827, where he remained until 1830, when he was banished on account of his taking part in favor of the so-called *Plan Montano*, proclaimed in Tulancingo by Gen. Nicolas Bravo, then vice-president under Bustamante. On the fall of this latter personage in 1833, Barragan returned with Santa Anna, who became president, and by whom he was appointed commandante general of Guadalajara, where he remained one year, when he was recalled to take charge as president of the republic, while Santa Anna went on an expedition against Zacatecas. After a few months of his presidential duties, he died of brain fever, and was succeeded by Don José Justo Cano, who was then chief justice of the supreme court.

BARRAL, JEAN AUGUSTIN, a French chemist, born at Metz in 1819. In his youth, on leaving the polytechnic school, he was employed in the bureaux of the administration of tobacco, where he distinguished himself by the extraction of nicotine from the tobacco leaf, and by establishing the fact of the poisonous nature of nicotine. Subsequently he paid much attention to the manufacture of gold, enameled China-ware, and the power of artificial magnets. He also studied the nature of manure and pastures, the manufacture of butter, &c., and, under the auspices of the academy of sciences, he analyzed the substances to be found in rain. In 1845 he was connected as teacher of chemistry with the polytechnic school, and since 1851 he has held the position of professor of chemistry and physics at the preparatory school of the college of St. Barbe.

BARRAMAHL, a district of British India, in the presidency of Madras, lying between lat.

12° and 18° N. It is a wild and mountainous region in the hill country, but very fertile. It was ceded to the British by the treaty of Seringapatam in 1792.

BARRAS, PAUL FRANÇOIS JEAN NICOLAS, comte de, a member of the French directory, born June 30, 1755, at Lohempoux (Provence), died at Chaillet, near Paris, Jan. 29, 1829. After serving as a lieutenant in the East Indies, he returned to France as a captain. This brief military career was of great service to him in after life. Being excessively dissolute, he quickly wasted his fortune; and, though he had no political opinions, he threw himself at once among the revolutionists, probably in the hope of retrieving his affairs. On July 14, 1789, he assisted in the taking of the Bastille; and Aug. 10, 1792, he took part in the attack against the Tuileries. He was then, notwithstanding his nobility, reputed a fervent patriot. In Sept. 1792, he was elected by the department of Var to the national convention, where he voted for the death of the king, with neither delay nor appeal to the people. In Oct. 1793, being sent as a commissary of the convention, to the south of France, in concert with his colleague, Fréron, he succeeded in forcing the anti-revolutionists to submission. He then boldly went alone, during the night, to arrest Gen. Brunet, who was charged with having traitorously delivered Toulon into the hands of the English. Returning to that city, he hurried the siege; and when Toulon was taken, owing especially to the skill of the young commandant of artillery, Bonaparte, he visited the traitors with the most severe punishment. His renown for patriotism was so well established in the south, that the popular clubs which were always ready to send in denunciations against the different republicans, had nothing but praise for him. Nevertheless, Robespierre was not deceived by his show of devotion to the republic; he well knew his profound immorality, and more than once was on the point of having him arrested. Barras was aware of this; and took his measures accordingly, siding with those who plotted the overthrow of the dictator. He was one of the most active in the revolution of the 9th Thermidor, and headed the troops who took Robespierre in the hôtel-de-ville, which greatly increased his popularity. Next day, having resigned his command, he was appointed secretary to the convention; and in Nov. a member of the "committee of general safety," when he proved himself at once an ardent persecutor of the Montagnards and the Emigrants. At the same time he proposed the celebration of the anniversary of the death of Louis XVI. On Feb. 4, 1795, he was elected president of the convention. On the 12th Germinal, when the mob who wanted to save Billaud Varenne, Collot d'Herbois, and Barère, from condemnation, presented themselves in arms, demanding "bread and the constitution of '93," he caused martial law to be proclaimed, and conducted himself with energy. On the 1st Prairial, he

again beat down the more formidable attack of the suburban people; and after a struggle, in which, for a few hours, victory was very doubtful, he succeeded in rescuing the convention from their invaders. On the 18th Vendémiaire, he was again intrusted with the command of the troops, to protect the assembly, and selected as his assistant Gen. Bonaparte, whose vigorous measures very promptly quelled the royalist insurrection. As a reward for his services, he was at once elected one of the 5 members of the new directorial government. This office he used as the means of gaining immense wealth and indulging his taste for dissipation and debauchery. He was at once surrounded by a crowd of intriguers, contractors of every kind, stock-jobbers, gamblers, beside a swarm of beautiful women of no respectability, who frequented his house, which was kept in the highest style. He led the life of a prince, and greatly contributed to the growing depravation of the time. He sometimes even played the tyrant: thus having been bitterly assailed by a journalist, he had him seized and whipped by his servants. It was not, however, without difficulty that he got rid of the troubles created by this affair. He contributed to the success of the 18th Fructidor, and became apparently the head man of the directory, while, in fact, every thing was in the hands of the shrewder and more honest Rewbell. In the internal revolution which occurred in the directory on the 30th Prairial, he succeeded in maintaining his position, and thenceforth reigned nearly paramount, until Sieyès entered the government, which he was secretly resolved to overthrow. A series of intrigues and plots then commenced, in which Barras, overcome by the superior cunning of his new colleague and of his former protégé Bonaparte, was put aside on the 18th Brumaire. Being suspected of correspondence with the royalists and strictly watched, he was constrained at last to fly to Brussels, where he consoled himself by living in great luxury. In 1804 he was permitted to return to France, having apparently given up all hope of playing any new political part. It is, however, almost certain that he was in the secret of Mallet's conspiracy, and had warned the patriots to be in readiness in case of success. Consequently, he was exiled to Rome, declined serving Napoleon in 1814, and started for France, but was arrested at Turin, and led to Montpellier, where he renewed his royalist intrigues, and lastly aspired openly in the interest of the Bourbons. On the arrival of Louis XVIII., he repaired to Paris, and being consulted on the first act of the new ministry, bluntly answered: "I will ruin the king and bring misfortune to Bonaparte back upon us." He went to Provence and returned again on the 3d restoration to Paris, in the vicinity of which he lived in a almost princely style, holding political and middle course between the monarchy and republic. In all his life he was a skillful actor, successfully performing a brilliant part, never

than a statesman. Napoleon had a poor opinion of him.

BARRATRY (It. *barrateria*, fraud), in maritime law, is fraudulent conduct by the master of a vessel, or by the mariners, to the injury of the owner of the ship or cargo, and without his consent. Gross negligence, or unauthorized acts of the master to the injury of the owner, are also held to constitute barratry. Under the first are included wilful acts, such as destroying or carrying off ship or cargo, or embezzling any part of the cargo; under the second, deviation from the usual course of the voyage by the master for his own private purposes, trading with an enemy, evading port duties, disregard of a blockade, and other acts exposing the vessel or cargo to seizure and confiscation. Barratry is one of the risks commonly insured against, and the underwriter is liable for loss by any of the acts above specified, with the limitations: 1, that the owner in order to recover must not have consented to the act of the master or crew, but the consent of the owner of the ship will not affect the right of the owner of the cargo; so also if the vessel has been chartered, the charterer is *pro hac vice* the owner, and will not be affected by the connivance of the real owner. 2. The underwriter is liable for the acts of mariners only so far as they could not be prevented by ordinary care on the part of the master. Barratry by the wilful burning, casting away, or otherwise destroying a vessel on the high seas, is a highly penal offence in Great Britain, and in this country if done by a person belonging to the vessel not being an owner, as also if done by an owner with intent to defraud an underwriter, shipper, or other part-owner. See **BARRETRY**.

BARRE, a township of Worcester county, Mass., situated on the Ware river, 55 miles west of Boston. The river affords a valuable water power. Barre contains 1 woollen factory, 1 cotton factory of 2,500 spindles, 1 powder mill, 3 grist mills, and 6 saw mills. Scythes and shoes are likewise manufactured. It has an academy and 2 weekly newspapers. Pop. 2,787.

BARRE, ANTOINE LE FÈVRE DE LA, a French naval officer, born about the beginning of the 17th century, and died May 4, 1688. He was appointed governor of Guiana in 1663, and retook Cayenne from the Dutch. In 1667 he was created lieutenant-general, and defeated the English in the Antilles, forcing them to raise the blockade of St. Christopher. In 1682 he was appointed to the governorship of Canada, taking the place of the Count de Frontenac. He was, however, recalled in 1684, for having caused the failure of the expedition to treat with the savages by his irresolution.

BARRE, JEAN FRANÇOIS LE FÈVRE, chevalier de la, burnt at the stake at the age of 18, at Abbeville, France, July 1, 1766. He was denounced by a personal enemy for purposes of revenge, as having insulted the church by mutilating a wooden cross which was erected on a bridge in the town; he was also accused of having neg-

lected to remove his hat during the passing of a religious procession, and of having sung impious and licentious songs at a supper party; for these acts Barre was condemned and sentenced to lose his tongue and right hand, and be burnt alive; he was put to the torture to force him to confess the names of his accomplices, but though suffering the most horrible pains he retained his firmness and refused to the last to implicate any one. The parliament of Paris mitigated his punishment, by permitting him to be decapitated before being burnt.

BARRÉ, ISAAC, colonel in the British army, born at Dublin, in 1726, died July 1, 1802. His father was a French refugee who was probably driven from his native land by the revocation of the edict of Nantes, and settling in Dublin opened a small shop; he afterward became a prominent man, served as alderman, and held other offices in Dublin. Isaac Barré received his education at Dublin university and afterward studied law in London, but feeling a distaste for this profession, he obtained an ensigncy in the army, and was finally ordered to Canada, where he remained until the surrender of Montreal. He then became an intimate friend of Gen. Wolfe, who obtained his promotion at various times, until he reached the rank of lieutenant-colonel. He was with Wolfe at the siege of Quebec, and witnessed the death of that celebrated general, he being himself severely wounded. After the surrender of Montreal, Sept. 8, 1760, Col. Barré was appointed bearer of despatches from Gen. Amherst announcing the event to Lord Chatham. He occupies a prominent position in "Benjamin West's great painting of the death of Wolfe." On Oct. 28, 1761, by the influence of the earl of Shelburne, Col. Barré was elected member of parliament for the borough of Chipping Wycombe. Almost his first political act was to make a personal attack upon the earl of Chatham. He has been accused of personal motives in this action, as he had considered Chatham an obstacle in the way of his promotion while in the army. This attack was as bold as it was unexpected, and at once raised Barré to a prominent position among the supporters of the ministry, Chatham leading the opposition. March 18, 1768, after the disbanding of Barré's regiment, he received the appointment of adjutant-general to the British forces, and the following May, that of governor of Stirling castle, his patron, Lord Shelburne, becoming first lord of the board of trade. By this sudden elevation to office, Barré found himself in receipt of an income of about £4,000 per annum, the reward of his political services. But this good fortune was destined to be short-lived, and in December of the same year, he was removed from his appointments, having joined the opposition and voted against the government on several occasions. In 1765, Mr. Grenville introduced the stamp act, which was immediately opposed by Barré, who made a forcible appeal to the house in favor of the colonies. His speech upon this

occasion deserves a place in the memory of every American; the justice of the cause he advocated roused him to a display of eloquence which astonished all who heard him. In 1766, under the second administration of Lord Chatham, Col. Barré was appointed one of the vice-treasurers to Ireland and was sworn of the privy council. On his retirement in 1768, he received from the corporation of the city of Cork, the freedom of the city in a silver box. On Jan. 21, 1769, appeared the first of the celebrated "Letters of Junius;" they continued to be published until 1772, and have been considered by many to have been written by Col. Barré. It is not remarkable that these wonderful letters should have been ascribed to him, as there were many singular coincidences between him and their writer, and the political opinions of Col. Barré seldom disagreed with those advanced in Junius's letters. In 1771 the ministry endeavored to suppress the practice of reporting the parliamentary debates. Warrants were issued, and the lord mayor and chief magistrates arrested. In the debates upon this occasion Col. Barré opposed the ministry, and after a full exposure of the corruption then existing in the house, and the strongest denunciation of their course, he left the house, calling upon every honest man to follow him. Throughout the administration of Lord North, Col. Barré continued the warm friend of the American colonies, and distinguished himself greatly by the boldness with which he advanced his sentiments. Having been deprived of his half-pay with his military rank, he lived upon the income of a small property which he owned in Ireland. On the dissolution of the North ministry, Lord Shelburne became secretary of state for foreign affairs, and Col. Barré treasurer of the navy. Afterward, upon Shelburne becoming premier, Barré received the post of paymaster of the forces, which he however held but a short time, as he retired into private life with his patron, in 1783. On his retirement Barré received for his many services a pension of £3,200 per annum, which was afterward exchanged for the sinecure of clerk of the pells, with £3,000 per annum. Col. Barré continued in parliament until 1790, when he retired, the loss of sight consequent on a wound received at Quebec, precluding all further attention to public affairs. He remained totally blind until his death, nearly 12 years, but retained his cheerful disposition until the last. He was a man of great moral and physical courage, a profound and acute politician, and thorough soldier. His name will always be connected with the history of America.

BARRÈGES, a watering place in France, department of Hautes Pyrénées, situated in the narrow valley of the Bastan, about 3,240 feet above the level of the sea. It consists of a single narrow street of about 80 wooden houses. The hot baths are the most celebrated in Europe for the cure of scrofula, gout, and rheumatism. Barrèges is much resorted to by

military men, and a hospital, founded by Louis XV., is provided for their use, capable of accommodating 500 officers and men.

BARREL, a hollow vessel made of staves, set on end, arranged around a circle, and bound together with hoops. By each stave being made wider in the middle and tapering a little toward the ends, the barrel is of larger diameter, or bulges, in the middle. The beveled edges of the staves cause them to fit closely together, making a tight joint along their length. The ends are closed by circular heads, the edges made thin to fit into a groove cut to receive them near the ends of the staves, in which they are held fast by driving the hoops upon the swell of the barrel. The construction of the barrel is most ingeniously adapted for combining great strength with lightness. It resists pressure from without by the arched arrangement of the staves; and the hoops secure it from the expansive force of gases often generated in its contents. Its form is the most convenient for transportation, admitting of the vessel being rolled or rapidly swung by hooks placed under the chine or ends of the staves. It is not strange, therefore, that many millions of them should be annually made for the numerous uses they serve. In the form of kegs, firkins, liquor casks, butts, hogsheads, &c. they are met with everywhere. Yet the Chinese, with all their ingenuity, it is said, have never made a barrel. Until recently barrels have been constructed entirely by hand, the cooper shaving the staves with the draw knife, and shaping them by clamps. But machines are now applied to this purpose, by which the work is done much more expeditiously. The staves, furnished from the saw in strips of proper size, are first planed, then steamed, then passed between a series of rollers, which compress and bend them into proper shape, both endwise and edgewise. A stave is next set up on end in a frame, which holds it securely, and forces it to its right bend, and swinging around to a plane working vertically on one side, one edge is jointed to its right bevel, and swinging to the other side, the opposite edge is served in the same way, the grooving at each end and crozing, the chamfering of the ends, and setting off, all being done by different cutters at the same time. Barrels of the ordinary size are made of 16 staves. Twenty are "shaped" in a minute. The jointing is effected at the rate of 4 staves in a minute to each jointing machine. With 4 of these to keep up with a shaper, 8 men and 4 boys can produce sufficiently perfect for about 400 barrels a day. The heads are made meanwhile in a machine called the head-cutter. This machine, which is in very successful operation, is the invention of Mr. Geo. W. Livermore, of Cambridgeport, Mass.—As a measure of capacity, the barrels of very variable dimensions, differing in size in different states, and with the materials it is designed to hold. In Connecticut the barrels for liquors must contain 81½ gallons of 231 cubic

inches each. In New York a barrel of flour must contain either 196 lbs., or 228 lbs. net weight; a barrel of beef or pork, 200 lbs. An English barrel of beer, by statute, must contain 86 imperial gallons. The measure of capacity called barrel bulk is 5 cubic feet.—Barrel is also used to express any thing long and hollow, as a gun barrel. It is also applied to the cylinder in a watch, about which the spring is coiled; and in anatomy, to the "cavity of the tympanum" of the ear.

BARREL-OF-BUTTER ISLAND, a small islet of Scotland, Orkney. It produces nothing of value except seals, for the privilege of killing which the tenant pays the proprietor a barrel of butter. This circumstance is the origin of the name of the island.

BARRELIER, JACQUES, a French botanist, born at Paris in 1606, died Sept. 17, 1678. Having first studied medicine, and taken the degree of licentiate in 1634, he then renounced the medical profession, to enter the order of Saint Dominic. From that time he devoted himself to theology, allowing only his moments of leisure for his favorite science of botany. He was selected for his talents and prudence, in 1646, as assistant of the general of the order on one of his tours of inspection, and in this capacity he travelled through France, Spain, and Italy, and found time, without neglecting other interests, to pursue his botanical studies. He collected numerous specimens of plants, and also founded and superintended a splendid garden in the convent of St. Xyost, at Rome, where he remained during many years. He had undertaken a general history of plants, to be entitled *Hortus mundi*, with reference to which he had a regular correspondence with the principal botanists of Europe. A part of the plants which he was to describe had already been engraved at Rome, when an attack of the asthma terminated his life. Many of his manuscripts were scattered and lost, but the copperplates of his intended work, and such of his papers as could be found, have been collected and made the basis of a valuable book by Antoine de Jussieu.

BARREN, a county in the southern part of Kentucky. Its name comes from the immense thinly-timbered tracts it contains, which are technically termed "Barrens." It is a moderately fertile region, watered by Barren river and 2 creeks. The superficial soil rests upon cavernous limestone, and sulphurous and saline springs are abundant, from which latter salt is made to some extent in the county. The chief staples are tobacco, grain, and live stock. In 1850 the productions amounted to 2,155,551 pounds of tobacco, 40,626 of wool, 1,007,560 bushels of Indian corn, and 208,398 of oats. There were 49 churches, 1 newspaper office, and 1,067 pupils attending public schools. Pop. about 20,000, including 4,584 slaves.

BARREN ISLAND. I. An island lying E. of Singapore, in the Chinese sea. II. A volcanic island in the gulf of Bengal, E. of Great

Andaman island about 60 miles. It is 18 miles in circumference, and its cone rises to the height of 1,800 feet. It is constantly active, and sometimes discharges stones and lava masses of 4 tons weight. There is very little vegetation on the island.

BARRETO, FRANCISCO DE, a Portuguese governor of the Indies, born at the commencement of the 16th century, and died on the banks of the Zambeze river, in 1574. He sent the poet Camoëns into exile at Macao. By order of the Portuguese government he undertook the conquest of that vague portion of Africa called Monomotapa. He set out on this expedition in April, 1569, and struck the continent where the Quilimane river runs into the Mozambique channel. His ambition was to penetrate to the mines of Massapa, whence the queen of Sheba was said to have drawn her treasures, and from which a nugget valued at 12,000 cruzadoes had lately excited cupidity in Portugal. In his explorations into the interior, he fell a victim to the climatic influences, and died in the arms of the missionaries who accompanied him.

BARRETRY (sometimes, but incorrectly, called barratry), in criminal law, the offence of stirring up suits and quarrels, and the party guilty of the offence may be indicted as a common barretor. It seems essential to the validity of the indictment that there must be more than one act, and that the alleged suits or quarrels must be between other persons. A man may bring any number of suits in his own name without being chargeable with this offence, but would be liable for bringing suits in the name of a fictitious plaintiff.

BARRETT, GEORGE HORTON, an American actor, born at Exeter, England, June 9, 1794. He left England with his mother, an actress of some celebrity, and arrived at Boston in Oct. 1796; he made his first appearance the same year in the part of Cora's child, in Pizarro, at the age of 2 years. He commenced playing in New York in 1806, at the Park theatre, in the part of Young Norval. He became manager of the Bowery theatre, New York, in 1826, in company with E. Gilfert. He afterward visited England, and in 1887 performed at Drury Lane theatre, London, under the management of Alfred Bunn. He was also manager of the Tremont theatre, Boston, and in 1847 opened the Broadway theatre, then newly erected, but is now retired from the stage. His favorite characters were in genteel comedy, but he has also acted in farce and low comedy with great success. From his elegance and stateliness, he was known by the sobriquet of "Gentleman George."

BARRETT, JOHN, an eccentric classical scholar, born in Ireland, about 1746, died at Trinity college, Dublin, Nov. 15, 1821. Little is known of his early life, except that, when 6 years old, he lost his father, a clergyman at Ballyroan. He obtained his education with difficulty, his mother having been left with very narrow means. Entering Trinity college as a sizar, his

diligence and talent obtained him a scholarship in 1773, and a fellowship in 1778. He was made vice-provost in 1806, and as his income was large, and his economy very great, he left the greater part of a vast fortune in trust to the provost and fellows, to be distributed for charitable purposes. His brother's children disputing the will, threw it into litigation, and succeeded in breaking it down. Dr. Barrett was in holy orders, but seldom officiated. He had the reputation of being one of the best general scholars in Ireland. His knowledge was so wholly derived from books, that he is said not to have been able to distinguish a turkey from a goose, to have ascertained, by elaborate ornithological research in the college library, that a swallow which had ventured in must be a stork, and secretly to have believed, when he saw a flock of sheep, that mutton was supplied by these animals. He very rarely quitted the precincts of the college, and many amusing instances of his simplicity and utter ignorance of the world are traditional. He was dwarfish in stature, and singularly careless in attire. In 1801 he published an "Inquiry into the Origin of the Constellations that compose the Zodiac; and the uses they were intended to promote." In 1808 appeared his "Essay on the Life of Dean Swift," including several original pieces ascribed to him. But his literary fame must rest upon the recovery of copious fragments of the gospel of St. Matthew, from a palimpsest in the college library. He found among the old manuscripts there, what appeared to be a monkish legend of the 18th century, written on vellum, in the common Greek letter of that era. On examination, Dr. Barrett saw nearly effaced letters under the modern writing, and the result of several years of persevering assiduity, was his clearly discovering a large portion of St. Matthew's gospel, part of Isaiah, and some orations of Gregory Nazianzen, all written in the uncial Greek letter, probably as early as the middle of the 2d century. This was transcribed by Dr. Barrett, and was published in 4to, at considerable expense, by the university, in 1801. A copperplate of each page was engraved, by which was secured a critical *fac-simile* of the original Greek. On one page is the ancient (re-discovered) text, opposite it the ordinary Greek version, and at foot copious notes in Latin, with numerous references.

BARRHEAD, a prosperous village of Scotland, on the Levern. It contains a large number of factories, mills, founderies, &c., employing in all about 5,000 hands. A railway was opened to Barrhead in 1849. Pop. in 1851, 6,069.

BARRICADE, a barrier formed in haste with trees, baskets of earth, palisades, wagons, or any thing that will obstruct the progress of an enemy, or serve for defence or security against his fire. Barricades have been resorted to in every country and in all kinds of warfare; but they have been used with especial success during civil struggles, and by the French more

than any other people in the world. During the troubles which followed the disastrous rout of Poitiers, Sept. 9, 1356, Étienne Marcel, mayor of Paris, ordered chains to be fastened at each end of every street, so that they could be closed on the first alarm, thus protecting the dwellings of the private citizens against the depredations of bands of ruffians, and affording at the same time means of resistance against tyrannical princes. These chains were useful against the English in 1436, when they were expelled from the capital by the national party. But the real barricades, of which these were but mere rudiments, were first erected by the Parisians toward the end of the 16th century. The good Catholic people, indignant at the conduct of Henry III., whom they called Ugly Herod, rose in arms against him, May 12, 1588, and pushed their barricades to the very doors of the Louvre; the king had no other resource than flight. Sixty years later, at the outbreak of the civil war known as *La Fronde*, another *journal des barricades* took place Aug. 27, 1648; and the young king, his mother, Anne of Austria and Cardinal Mazarin, were obliged to flee from the capital. The royal power again becoming paramount, barricades were out of use for nearly 2 centuries. They were not resorted to during the great French revolution, because the popular strength was so overwhelming. During the restoration, however, barricades were set again; they were uselessly tried in 1827, but they succeeded beyond anticipation when the people rose against Charles X. Then they proved a formidable means of resistance, and even of attack, against the royal troops, who were unable to dislodge the insurgents, and the revolution was triumphant. During the reign of Louis Philippe, several attempts at rebellion took place, and barricades were resorted to; those of the Rue Transnonain have preserved a bloody celebrity, but in every case the rebels were overpowered by the troops and national guards. The barricades, however, had their revenge in 1848; many were constructed during the days of February, and their very sight was the omen of Louis Philippe's fall. Once more barricades were constructed in Paris during the frightful battles of June; never were ramparts overflowed by such rivers of blood; defeated and attacked on both sides by citizens engaged in a deadly conflict, they were at once the seat of deeds of heroic courage and merciless brutality. Since then, macadamized streets have been substituted for stone pavement, the principal material for barricades is thus removed, and their use seems to be over.

BARRIER ISLAND, one of the New Zealand group. It is situated off the gulf of Hokianga on the North island, is 80 miles in circumference, and has one good harbor at its N. W. extremity.

BARRIER REEFS. These are reefs of coral which rise up from great depths among the South sea islands, at a distance of several miles from the coast, and extend along in front of it.

as a barrier against the heavy roll of the sea.—The most remarkable of these is the great reef off the N. E. coast of Australia. Its distance from the shore varies from 20 to 70 miles, averaging from 20 to 30. It is from $\frac{1}{2}$ of a mile to 1 mile wide, and continues for about 1,200 miles in length, with only 1 interruption of much extent, which is off the southern coast of New Guinea. There are several small openings through it, by which vessels may enter into the great sea between the reef and the land, where smoother water is found, of good navigable depth throughout its extent. Other reefs of this nature are met with along the opposite coasts of the islands of Louisiade and New Caledonia, and between are numerous coral islands, called atolls. These reefs and islands have caused this portion of the south Pacific to be called the Coralline sea. The rolling of the long line of sea, as it breaks upon the straight reefs, is described as a display of simple grandeur, beauty, and power, unique in kind, but often sublime in its effect, and terrible in its force and deafening roar. The subject is further noticed under the article ATOLL.

BARRIER TREATY, a treaty signed Nov. 15, 1715, by the emperor of Germany, the king of Great Britain, and the States General of the United Provinces, the object of which was to define the northern frontier of France. It was the legitimate result of the war of the Spanish succession, and was dictated by the jealousy of the contracting parties, and particularly of Holland, at the efforts of Louis XIV. to destroy the balance of power in Europe by elevating his grandson to the throne of Spain, to which the provinces adjoining the new boundary belonged.

BARRIGA NEGRA, a town or village of Uruguay, South America. Each of the large breeding estates in its vicinity is stocked with from 60,000 to 200,000 head of cattle.

BARRINGER, DANIEL MORRAT, an American statesman, born in the county of Cabarrus, N. C., about 1807. He graduated at the university of North Carolina in 1826, established himself in the practice of law in 1829, and, after gaining distinction as a lawyer, was, in 1848, elected a representative to the national congress. He was twice reelected, and, upon the accession of President Taylor, was appointed minister plenipotentiary to the court of Spain, an office which he retained until the accession of President Pierce.

BARRINGTON, GEORGE, British governor of North Carolina in 1724. Even in that early day, he describes the people he was sent to govern as subtle, crafty, insurrectionary; driving out their rulers, and defending their insolence by arms. He anticipated his own fate—was himself compelled to fly the colony, making his way to Charleston, whence he escaped to England. He was a rioter, a debauchee, a "peep o' day boy," and very soon after his return to England, engaging in one of his usual night excesses, he was found murdered in St. James's park.

BARRINGTON, JOHN SHUTE (the first viscount Barrington), born 1678, died 1734. To his family name of Shute the surname of Barrington was added on his accession to the Barrington estates, in Essex. In 1720 he was placed in the peerage of Ireland, as Viscount Barrington. He had previously sat in the British house of commons, whence he was expelled on account of his connection with the Harburgh lottery. He was author of *Miscellanea Sacra*, an essay on the several dispensations of God to mankind, and "The Rights of Protestant Dissenters."—His eldest son, WILLIAM WILDMAN, was successively secretary of war, chancellor of the exchequer, and treasurer of the navy. He retired from public life in 1778, after 84 years' official service, and died in 1793.—JOHN BARRINGTON, his 2d son, a major-general, commanded the British troops at the taking of Guadeloupe, in 1758, and died in 1764.—DAINES BARRINGTON, his 3d son (born 1727, died 1800), antiquary, lawyer, and naturalist, was made 2d justice of Chester, in 1757, which office he held for 26 years, when he resigned it and passed his remaining years in the chambers in the temple, to which he was entitled as a benchman. He was a voluminous author, his chief work being "Observations on the Statutes," which passed through 4 editions in his lifetime. He wrote several papers on antiquities and natural philosophy, and strongly advocated the propriety of an expedition of discovery to the polar regions.—SAMUEL BARRINGTON, the 4th son, died March 14, 1800, became rear-admiral. He took St. Lucia in the face of a superior force, and was conspicuous for his zeal and courage at the celebrated relief of Gibraltar by Lord Howe.—SHUTE BARRINGTON, the youngest son, born 1734, died March 27, 1826. Having entered the church, he was successively chaplain to George III., canon of Christ church, canon of St. Paul's and Windsor, and bishop of Llandaff, Salisbury, and Durham. He was translated to his last see in 1791, and held it for 35 years. He was high-church and anti-papal, a tory, a scrupulous and vigilant official. His income was large, and his charities commensurate with it. The sum of £60,000 having come into his possession, by a suit respecting some coal-mines in his diocese, he devoted the whole of it to the foundation of charity schools and the relief of poor clergymen and their families.

BARRINGTON, SIR JONAH, lawyer and author, born in Queen's county, Ireland, in 1767, died at Versailles, near Paris, April 8, 1834. He graduated at Trinity college, Dublin, was called to the Irish bar in 1788, and entered the Irish parliament in 1790, as member for the borough of Tuam. His father being a gentleman of large landed property, who had thriven under governmental patronage, Mr. Barrington's maiden speech as a legislator was directed against Grattan and Curran, two eloquent leaders on the popular side. To reward and encourage him, a sinecure in the Dublin custom house, worth £1,000 a year, was given to him

in 1798, and he was made king's counsel, an honor conferring station and precedence rarely bestowed on a barrister of only 5 years' standing. He said, in his "Personal Sketches," that he might have been solicitor-general in 1799, if he had consented to vote for the union. Whatever the cause, he changed sides on that occasion, voting against the union, and displaying such zeal for his new friends, the liberals, and such hostility to Lord Chancellor Clarendon, whom they hated, that in 1808 he was very nearly returned to parliament for the city of Dublin, and in the popular interest—the first 4 votes in his favor being those of Grattan, Curran, Ponsonby, and Plunket. The Irish government thought it worth while to silence this patriot. Accordingly he was made judge of the Irish admiralty court, and also knighted. Between 1809 and 1815, being dissatisfied at not having obtained higher preferment, he published 5 *liaraisons* in 4to (constituting the 1st volume) of the "Historic Memoirs of Ireland," comprising secret records of the national convention, the rebellion, and the union; with delineations of the principal characters engaged in these transactions. This volume brought the narrative down only to the assertion of independence by the Irish parliament, and the conclusion, referring to the rebellion of 1798 and the union in 1800, was as eagerly expected by the public as it was dreaded by the government, which included Lord Castlereagh and others, who had taken part in these transactions. Sir Jonah, in 1815, was compelled by the pressure of debts, improvidently incurred, to seek safety from personal arrest in France, and it is believed that he consented to abandon his Irish revelations on condition of receiving the full salary of his office, while residing in France, its duties being performed by a deputy, chosen and paid by the government. In 1837 he published 2 volumes of "Personal Sketches of his own Times," and a 3d volume (much inferior) appeared in 1832. It is lively, exaggerated, amusing, and eccentric, and has been twice republished in the United States with great success. In 1880, Sir Jonah was charged in parliament with appropriating to his own use funds belonging, under the admiralty laws, to suitors in his court. He went to London to plead his own cause, but the charges were declared to be proven, and he was removed from office. He lost no time in preparing the second volume of his delayed work, "Historic Memoirs," which was well received, as an account (by an actor in the events) of the manner in which the nationality of Ireland was surrendered by the Irish parliament. This work, very expensive as a quarto, liberally illustrated with portraits, was subsequently reproduced, in a cheap form, as the "Rise and Fall of the Irish Nation," and has had a large sale in the United States. Sir Jonah Barrington's free-and-easy gossiping style, in his "Personal Sketches," is more agreeable than the labored manner of his historical work. His fund of anecdote was rather

large than authentic—indeed, he started with the avowal that "the writing of mere commonplace truths requires no talent whatever." However, a good idea may be obtained from him of political, legal, literary, and social Irish life, during the last 40 years of the last century.

BARRISTER, in England, a counsellor in law, admitted to plead at the bar and to undertake the protection of clients. Barristers were anciently styled apprentices at law, and were admitted to the grade of sergeant only after an apprenticeship of 16 years. A person intending to be called to the bar must be admitted to one of the 4 inns of court, inner or middle temple, Lincoln's inn, or Gray's inn, where he must reside for 5 years, or for 3 years if he be a graduate of Cambridge, Oxford, or Dublin university. In accordance with a notion derived from the old Roman lawyers and patrons, who gained influence by practising, not for money, but for honor, the fees of barristers are considered merely honorary, and cannot, therefore, be recovered by any legal action.

BARROIS, LA, an old district of France, which formerly composed part of Lorraine, but is now included in the department of the Meuse. It contained the fortress of Bar, built by Frederic, duke of Mosellana, the brother-in-law of Hugh Capet, and whose successors bore the title of counts and dukes of Bar for seven centuries.

BARRON, JAMES, an American commodore, born in Virginia, 1768, and at the time of his death, April 21, 1851, the senior officer in the service. He commenced his naval career when very young, under the auspices of his father, who held the rank of "Commodore of all the armed vessels of the commonwealth" of Virginia, during the entire war of the revolution, and until the state navy was disbanded. In 1798, on the formation of the present navy, Barron received his commission as lieutenant, and served with credit under Com. Barry, during the short period of troubles with France, sometimes styled "the war" with that kingdom when our national vessels were ordered to attack and capture French cruisers. In 1794 Barron was promoted to the highest grade in the navy, and under the command of his elder brother, Com. Samuel Barron, was ordered to the Mediterranean, where he became known for his skill in seamanship, as well as his scientific attainments. He was regarded as one of the best officers and most thorough disciplinarians in the navy, and he continued with short intervals to be employed in sea service, until 1807, when the unfortunate affair of the Chesapeake frigate of 38 guns, with the English ship *Leopard* of 50 guns, threw a shadow over his name. On June 23, 1807, the Chesapeake, Capt. Barron, bearing the broad pennant of Com. Barron, got under way from Hampton Roads, bound for the Mediterranean. At the same time the *Leopard*, of 50 guns, Capt. Humphreys, also left the same anchorage, preceded the Chesapeake by a few miles, and at 8 o'clock, P. M.

being a mile to windward, wore round and bore down upon the American ship, and as she came upon the weather-quarter, hailed, and informed her that she had a despatch for Com. Barron. Until this moment, nothing unusual was perceived in the movements of the *Leopard*, but it was now seen that her lower deck ports were tried up, that the tompions were out of her guns, and that she was evidently prepared for mischief. A boat was lowered immediately from the *Leopard*, and a lieutenant came on board the *Chesapeake*. He bore a despatch, signed by Vice-admiral Berkeley, dated Halifax, June 1, ordering all captains under his command, should they fall in with the *Chesapeake* anywhere on the high seas, to show her commander the order to "require to search for deserters," and "to proceed to search for the same." Some correspondence had taken place in Washington, between the British minister and the home government, in regard to men on board the *Chesapeake*, said to have deserted the English service, but full explanations had been made, and all was supposed to be satisfactory. To the missive from the English admiral, Com. Barron replied that he knew of no such deserters on board the *Chesapeake*, and that his orders would not allow him to suffer her crew to be mustered by any officers but their own. The lieutenant returned, and in a very few moments afterward the *Leopard* fired a broadside into the *Chesapeake*. The American ship was in no condition to return it; beside her inferior force, she was in utter confusion on first coming out of port, and it appears strange that any man-of-war should ever be permitted to go to sea in such a state, unable to clear for action on a sudden emergency. She had a perfectly raw crew; her decks were littered with cables, stores, and even cabin furniture, and the baggage of passengers, and although the guns had been loaded, rammers, wads, matches, gun-locks, and powder-horns were all wanting. And here it is proper to state, that in conformity with the custom of the navy, the equipment of the ship for sea had been entirely confided to her immediate commander, Capt. Gordon, who was an officer of high standing. Com. Barron's visits to her were but few and brief, until the captain officially, and in writing, reported her ready for sea, and that her crew had been stationed at the guns. This was 8 days before she sailed. The *Leopard* continued to fire, until Barron finding that no resistance could be made, ordered the colors struck. A single gun was fired by the *Chesapeake* just as her colors were hauled down. There being no matches at hand, it was discharged by means of a coal brought from the galley. The ship received 21 shot in her hull, and 8 were killed, and 18 wounded, among whom were Com. Barron, and his aid, Mr. Broom. Four men, claimed as English, were taken out of her, and she returned to Hampton Roads the same evening. Intense excitement was created

throughout the country by this high-handed outrage, and the vengeance demanded against England was not forgotten until after the succession of naval victories, which crowned the American arms in the war of 1812. Barron was court-martialed under 4 charges, which embraced 22 specifications. He was entirely acquitted of 8 of the charges, but was found guilty of 2 specifications of a charge "for neglecting, on the probability of an engagement, to clear his ship for action," and sentenced to be suspended for 5 years, without pay or emoluments. The court closed its finding on the subject of the personal conduct of the accused, in the following language: "No transposition of the specifications, or any other modification of the charges themselves, would alter the opinion of the court as to the firmness and courage of the accused; the evidence on this point is clear and satisfactory." Such was the fate of Com. Barron, but it is more than probable that under the state of public feeling, demanding a victim, those who were really responsible for the efficiency of the *Chesapeake*, escaped unpunished. Admiral Berkeley's conduct was disavowed by the British government, and he was recalled from his command. Capt. Humphreys was never afterward employed afloat. On March 22, 1820, after a long correspondence with Com. Decatur, growing out of the old affair of the *Chesapeake*, Barron fought a duel with him at Bladensburg. Both fell at the first fire, and it was supposed both were mortally wounded. Decatur died the same night, and Barron recovered after months of great suffering. During the latter years of his life he held several important commands on shore. The command of the squadron in the Pacific was tendered to him, but declined.

BARRON, SAMUEL, brother of the foregoing, a commodore in the American navy, born in Hampton, Va., in 1768, died Oct. 29, 1810. In 1798 he commanded the brig *Augusta*, which was prepared by the citizens of Norfolk to resist the aggressions of the French. —During the war with Tripoli at a subsequent period, he took a conspicuous position, and in 1805, commanded a squadron of 10 vessels, his flag ship being the *President*, 44. The pasha of Tripoli, or bashaw as he was styled, was Jussuf Caramalli, a usurper, who had deposed his brother Hamet. Mr. Eaton, the consul at Tunis, was apprised that it might be of great service to secure the coöperation of Hamet in the war against his brother, and prevailed on the American government to lend indirect support to the measure. Com. Barron received the following instructions: "With respect to the ex-bashaw of Tripoli, we have no objection to your availing yourself of his coöperation with you against Tripoli, if you shall upon a full view of the subject, after your arrival upon the station, consider his coöperation expedient. The subject is committed entirely to your discretion; in such an event, you will, it is believed, find Mr. Eaton extremely

useful to you."—Acting upon these instructions, Com. Barron despatched Mr. Eaton, in a vessel of the squadron, to Egypt, where Hamet was serving with the discontented Mamelukes, and the commander of this vessel, Capt. Hull, obtained from the viceroy of Egypt, permission for the ex-bashaw to quit the country, although he was arrayed against the government. Aided by 8 vessels of the squadron, the Hornet, Argus, and Nautilus, Mr. Eaton and Hamet Caramalli attacked and took the town of Derne on the Tripolitan coast on the 27th of April, 1805. Eaton now pressed Com. Barron for further supplies and reinforcements against Tripoli, but they were denied on the ground that Hamet Caramalli had been put in possession of the second province in the regency, and ought to be able to effect his object by means of the ordinary coöperation of the squadron. Com. Barron was perhaps influenced in this decision by other considerations. Capt. Bainbridge, with his officers and men, were at this time held in rigorous captivity in Tripoli, and it was well known that the reigning bashaw considered that the United States, by coöperating with his brother, warred against his personal safety, and had threatened a bloody retaliation if this coöperation was persisted in.—Com. Barron soon afterward relinquished his command to the officer next in rank, Capt. John Rodgers, in consequence of extreme ill health, and returned to the United States. He was considered an excellent officer, and died much respected just as he had been appointed to the important command of the navy yard at Gosport, Va.

BARROS, João de, an eminent Portuguese historian, born 1496, died 1570. He was of noble family and early employed about the court. In 1522 he was governor of a Portuguese settlement on the coast of Guinea, and afterward treasurer of the Indies. He was recommended by the king himself to cultivate history, some of his compositions having been read with approval by his majesty. He wrote the history of Portuguese conquest in India, down to A. D. 1526. It was continued by Diogo de Couto, the historiographer of Philip II. of Spain, and by João Baptista Lavanha. The best edition is that of 1778, from the royal press of Lisbon. He also wrote a historical romance, "*Cronica do Imperador Cláudio*."

BARROSA, a village and ridge of hills about 4 miles distant S. E. from the mouth of the Santi Petri river, which divides the isle of Leon, on which stands the city of Cadiz, from the mainland of Andalusia, famous for a battle fought between the allied armies of Spain and England, under La Peña and Gen. Graham, against the French under Victor, in 1811. The French were beaten by the English, though La Peña behaved treacherously.

BARROT, I. CAMILLE HYACINTHE ODILON, better known under the name of ODILON BARROT, a French jurist and statesman, son of a member

of the convention, was born at Villefort (Lozère), July 19, 1791. He inherited a taste for public affairs from his father, who was an active politician; at the same time he distinguished himself at an early age in the legal profession. He was only 19 when he made his first appearance as pleader before the tribunals of Paris, and not more than 23 when he was officially appointed as one of the advocates of the court. His eloquence at the bar paved his way to the forum. On various occasions he proved himself a sturdy champion of civil and religious liberty in cases in which he was employed as counsel for defendant. In his parliamentary career he manifested the same zeal for liberal principles. After having occupied a seat in the chamber of deputies under the government of Louis XVIII., he became, subsequently, one of the parliamentary leaders of the opposition, and, as such, was instrumental in the overthrow of Charles X. Under Louis Philippe he discharged for some time the functions of prefect of the department of the Seine, but he disapproved the policy of Guizot, and having been chosen as a member of the chamber, he entered the ranks of the opposition. After sundry parliamentary conflicts, we eventually find him engaged in reformatory movements, and exciting the public mind in the provinces, while Thiers was agitating the chamber. An open rupture finally took place in 1847, on the subject of public banquets. The right of holding them for political purposes was questioned by the government, but asserted by Barrot and his party. This banquet excitement became, in fact, the immediate cause of the revolution of 1848, and of the downfall of the Orleans dynasty. On the morning of Feb. 23, 1848, after it had come already to a collision in the streets of Paris, Thiers was called upon by Louis Philippe to form a new ministry. Thiers insisted upon Barrot's coöperation, and, urged by the imminence of the crisis, the king was compelled, on the morning of Feb. 24, to appoint Odilon Barrot prime minister of France. But it was too late. Barrot's prestige could not quell the storm which the agitation of his principles had aroused. His first ministerial measure—the recall of the troops—gave the *coup de grâce* to Louis Philippe. After the flight of the king, Barrot made an attempt to urge upon the chamber, during its last sitting, the claims of the duchess of Orleans to the regency. But in vain. His power was gone. As an opponent of Louis Philippe he had done more than he anticipated; but now he had to withdraw, and yield his place to Lamartine. Subsequently, on Dec. 10, 1849, he became president of the council and keeper of the seal, but in many of his public acts we find, henceforward, a tendency to oppose the republican movement. On the other hand, he was unwilling to serve under the new order of things which was brought about by the *coup d'état* of Dec. 2, 1851, and since then he has kept aloof from politics. His policy was to cultivate the growth of liberal

principles under a constitutional monarchy. Much, however, of his reputation as a statesman was gained by his ability as an orator. This made him formidable in the chamber and at the bar. His oratory, although more directed to the feelings than to the judgment, generally produced an electric effect, which was strengthened by the magnetism of a dignified presence. II. FREDERICK, brother of the foregoing, born in 1805, also a lawyer by profession, was a member of the chamber of deputies in 1845. Having displayed some talent in handling the questions connected with Algeria, he was in 1848 chosen as representative of that colony to the constituent assembly. He had ingratiated himself with Louis Napoleon by his services as counsel, consequent upon the attempts upon Strasbourg and Boulogne, and became his secretary-in-chief, and acted as his minister of the interior from Oct. 31, 1849, to March 15, 1850, when he was succeeded by M. Baroche. Afterward he was ambassador at Turin, until the consummation of the *coup d'état*, which brought him back to Paris, where he became a councillor of state and senator.

BARROW, the name given to artificial mounds, which from the remotest antiquity have been reared in various parts of the earth, in honor of distinguished persons. They are formed either of earth or of stones, are mentioned in the book of Joshua and the Homeric poems, and are found among the relics of Egyptian, Greek, Roman, and Scythian domination. There are also in England and Scotland numerous barrows of druid origin, one of which, known as that of Wayland Smith, in Berkshire, is mentioned in Sir Walter Scott's novel of Kenilworth. Barrows are also found in large numbers in America, the memorials of an unknown history.

BARROW, a river in Ireland, next in size and importance to the Shannon. It rises in the mountains of Leinster and flows in a southerly direction about 90 miles to the estuary of Waterford harbor, of which it forms a part. For a river of its size, it is navigable for ships a considerable distance, and barges ascend to it, about 60 miles, where it is joined by a branch of the grand canal. It forms the boundary line of the counties of Kildare, Carlow, Wexford, Kilkenny, and Queens. The towns of Waterlington, Athy, Carlow, and Craig, are on its banks.

BARROW, ISAAC, a mathematician and divine, the first incumbent of the Lucasian chair at Cambridge, afterward rendered so illustrious by his pupil Newton, was born in London, 1630, died May 4, 1677. His father, a linen-draper, put him first for a few years at the Charter House school, but he proved a pugnacious and idle boy. At Felsted, in Essex, he showed more aptitude for study, and prepared himself for Cambridge, where he was first admitted a pensioner of St. Peter's, afterward of Trinity college. At the age of 25, having mas-

tered most of the learning of that period, he started for France and Italy, and by way of Leghorn to Smyrna. On the voyage, the ship was attacked by an Algerine pirate, and Barrow bore a heroic part in a successful resistance of the assault. From Smyrna he went to Constantinople, where he studied Chrysostom's writings with great delight. Returning homeward by way of Venice, Germany, and Holland, he was ordained to the Episcopal ministry in 1659, and at the age of 30, was appointed professor of Greek at Cambridge. In 1662 he was appointed professor of geometry in Gresham college, and in 1668, elected a fellow of the royal society at the first election after their incorporation. He was the same year elected by the executors of Mr. Lucas, the first occupant of the chair of mathematics founded in his will. Six years afterward, at the age of 39, he resigned this post and was succeeded by Sir Isaac Newton. In 1672 he was appointed master of Trinity college, and in 1675, chosen vice-chancellor of the university at Cambridge, but soon after was taken away by a fever. His scientific works consist of an edition of "Euclid's Elements," of "Euclid's Data," "Lectures on Optics," "Lectures on Geometry," an edition of "Archimedes," "Apollonius's Conic Sections," and "Theodosius's Spherics," a lecture on "Archimedes's Sphere and Cylinder Theorems," and lectures on "Mathematics." All these works are in Latin. After resigning the Lucasian chair, he wrote in his native tongue, and solely on theological and religious themes, or questions of practical duty. His theological works, consisting of treatises on the pope's supremacy and the unity of the church, and of sermons on the creed, the Lord's prayer, the decalogue, and the doctrine of the sacraments, were published in 8 folio volumes a few years after his death. His sermons usually occupied from 1½ to 3 hours in delivery, and though they are sometimes prolix, they are more frequently marked by a pregnant brevity of expression, and contain passages which, in vigor of style and exhaustiveness of view, are perhaps unsurpassed in pulpit literature. His works retain their value to the present day, being rich in thought and diction, and offering to the mathematician, and also to the Christian student, not only treasures of knowledge, but fertile suggestions of wisdom. Westminster abbey offers to the English Christian scholar no tomb or bust that awakens a more just patriotic pride than those of Dr. Isaac Barrow.

BARROW, SIR JOHN, traveller, author, and for many years secretary to the British admiralty, born near Ulverstone, in Lancashire, June 19, 1764, died Nov. 28, 1848. Devoting himself early to the study of astronomy, geography and mathematics, he taught the former at an academy at Greenwich, from 1786 to 1791. Through the interest of Sir George Staunton, whose son he taught, he went out, in 1792, as comptroller of the household, in Lord Macartney's embassy to China, and published an account

of it, ten years later, in his "Travels in China." When Lord Macartney was appointed governor of the Cape of Good Hope, in 1797, he took Mr. Barrow with him as private secretary, and soon after made him auditor of public accounts, which office he held until the English evacuated the Cape in 1808. The results of several journeys into the interior were communicated to the world by Mr. Barrow, in his "Travels in Southern Africa." In 1804, Lord Melville appointed him second secretary to the admiralty, and with the intermission of a few months in 1806-7 (during "all the talents" administration), Mr. Barrow remained in this office until 1845, during 18 changes of ministry. He was a most active, intelligent, and industrious official. In 1806 he was granted a pension of £1,000 a year, to commence on his retiring from the public service. In 1830 he founded the geographical society. In 1835 he was created a baronet.—Sir John Barrow greatly promoted various projects for the advancement and increase of geographical knowledge. Various voyages to the arctic regions were undertaken on his suggestion. His work on China was translated into French by Malte-Brun, and De Guignes, the orientalist, wrote a particular treatise, entitled *Observations sur les Voyages de Barrow à la Chine*. Sir John Barrow was a voluminous writer. His most elaborate work was "An Historical Account of the Arctic Regions," published in 1818. He also wrote biographies of Lord Macartney, Lord Anson, Lord Howe, Sir Francis Drake, Peter the Great, Naval Elizabethan Worthies, with a narrative of the mutiny of the *Bounty*, and some other works, concluding with an autobiography, written in his 88d year. He contributed to the "Encyclopædia Britannica," and wrote 195 papers, chiefly geographical, for the "Quarterly Review." II. His son, Sir GEORGE BARROW, born in 1806, was educated at the Charter House; is a senior clerk in the colonial office; married Rosamond Pennell, adopted daughter of Mr. J. Wilson Croker, in 1832; is the author of "Tours in Ireland and Norway," and edited a memoir of his father, by Sir George T. Staunton, who was secretary to Lord Macartney's Chinese embassy.

BARROW POINT, a low promontory forming the most northerly point on the Arctic American coast, in N. lat. 71° 28' 31" W., long. 156° 21' 30".

BARROW STRAIT, leading from Baffin's bay into Prince Regent's inlet, averaging 40 miles wide, with rugged and mountainous coasts in lat. 74° N., and between long. 84° and 90° W.; depth from 75 to 200 fathoms. Capt. Parry first navigated it in 1819-20.

BARRUEL-BEUVERT, ANTOINE JOSEPH, comte de, born Jan. 17, 1756, died at Turin, in Jan. 1817, was the author of a life of Rousseau, and of various writings connected with the Bourbon family, belonged to the royalist party during the revolution, was one of the authors of the anti-revolutionary pamphlet, *Actes des Apôtres*, and when Louis XVI. was arrested at

Varennes, he offered himself as hostage for the king. He hid himself during the revolution, but subsequently he was arrested on account of sundry pamphlets in reference to the 13th Brumaire, but released at the intercession of Josephine, who obtained for him a small appointment at Bésançon. After the restoration he made himself notorious by turning evidence against a man of the name of Biennais, accusing him of participation in the outbreaks of Sept. 2 and 3, 1792. Biennais driven to madness by this accusation, committed suicide.

BARRUNDIA, JOSÉ FRANCISCO, one of the principal promoters of the independence of Central America, and subsequently president of the republic of the same name, born in the city of Guatemala, in the year 1779, died in New York, Aug. 4, 1854. His family was one of the most distinguished in Central America and many of its members had held high positions under the crown. He had hardly attained his majority, when he took public ground in favor of popular rights, and, in a series of papers, printed in spite of vice-regal prohibitions, boldly attacked the colonial system of Spain, and all the arbitrary distinctions of society with which it was connected, and he boldly proclaimed the people as the only legitimate source of government. He was at once denounced as impious and heretical by the church, persecuted socially by the aristocracy, and proceeded against rigorously by the viceroy. Finally, he was accused of conspiring against the crown, he was tried, and, with a number of his associates and followers, condemned to death. They however escaped to the mountains, where they remained in concealment for 6 years, until 1819. During this time, Barrundia made himself acquainted with the English language, and became prepared to take part in the scenes of his country's emancipation. As soon as the popular feeling was ripe for the movement, he emerged from his hiding place, and put himself at the head of the revolutionary party of Guatemala. On Sept. 15, 1821, he witnessed the first triumph of the cause, which he had dedicated his life, in the declaration of independence by the people in the primary capacity, in the great square of the native city, where 8 years before he had been sentenced to execution. In the protracted and bloody struggles which subsequently ensued between the monarchists and liberals—the first in favor of annexing the country to the general Mexican empire, under Iturbide, and the latter determined on a republic on the plan of the United States—Barrundia took a conspicuous part in the councils of the liberals, of which he was the acknowledged intellectual leader. As such, he suffered greatly in person and property. As a member of the first republican constituent assembly, on April 10, 1824, he introduced and carried a decree for the immediate abolition of slavery throughout the republic. As soon, however, as the independence of the

country was secured, and its political form defined, Barrundia devoted himself to such reforms, social and civil, as its new condition required. Although called frequently to hold high political position and executive authority, he invariably declined office, devoting his time to plans for the reorganization of the judiciary of the country, to conform to its altered circumstances. Always ardent in his admiration of the United States, he studied its laws with the greatest attention, and finally presented to his countrymen a translation of the code drawn up by Mr. Livingston, for the state of Louisiana. He brought it before the legislature of his own state, and procured its adoption. In 1825 he was elected vice-president of the republic, but declined the post. In 1829 he was charged with the presidency itself, in which position he served with wisdom and moderation. Not a drop of blood stains the record of his administration. Justly comprehending that popular ignorance was the canker at the heart, from which the institutions of the country had lost to fear, he applied himself to the organization of a general system of public instruction. To give it the support of a high example, in common with the other officers of state, he devoted the intervals of his official duties to the practical service of teaching a common school. In the troubles which overwhelmed the country, after his retirement from office, his voice as always heard counselling moderation and humanity. In its darkest hours he never surrendered the hope of witnessing its regeneration, nor ceased his efforts to restore its peace and reconstruct the confederation. When, in 1852, 8 of the 5 states which had composed the old republic again united, he was unanimously chosen president. But the compact was of brief duration, and before he had entered on the duties of his office, 2 of the states had withdrawn their adhesion, and the last attempt at national unity had failed. Barrundia thereupon tired from political life, and devoted himself to writing the history of the events in which he had played so conspicuous a part. In 1854, however, he was persuaded by the government of Honduras to accept the post of minister to the United States, for the purpose, as it is alleged, of securing the annexation of that republic to the American union. He reached the United States, but before entering on the duties of his mission, he was stricken with apoplexy, and died.

BARRY, I. A south-western county of Michigan, intersected by Thornapple river, a valuable stream, and comprising an area of 576 sq. miles. It has an undulating surface, occupied alternately by tracts of fertile prairie and woodland, and dotted with numerous small lakes. The principal kinds of timber are the sugar maple, ash, and beech. The staples are grain, potatoes, and wool. In 1850, the productions amounted to 79,999 bushels of wheat, 242 of Indian corn, 41,819 of oats, 58,619 potatoes, and 6,541 tons of hay. There

were 1,189 pupils attending public schools. The county was named in honor of William T. Barry, postmaster-general under President Jackson. Capital, Hastings. Pop. in 1850, 5,072. **II.** A south-western county of Missouri, bordering on Arkansas, comprising an area of 708 sq. miles, and drained by King's river, Flat creek, and White river of Arkansas. It has a hilly surface, in some places covered with forests, in others occupied by rich prairies. The principal rock is limestone. Lead is known to exist in various parts of the county, but the mines have not been explored to any great extent. Grain, cattle, and swine are the staples. The productions in 1850 amounted to 194,525 bushels of Indian corn, 18,166 of wheat, 23,824 of oats, and 28,109 lbs. of butter. Capital, Cassville. Pop. in 1856, 4,929, of whom 244 were slaves.

BARRY, SIR CHARLES, an English architect, born at Westminster, in May, 1795. After pursuing his professional studies in England, he travelled upon the continent, and in Italy attracted the attention of some persons of taste and fortune, by the beauty and force of his drawings. He visited Greece and Egypt, and returned to England in 1821, after an absence of 3½ years. He was the successful candidate for designs for several edifices in the Grecian, Italian, and Gothic styles, and in London attracted particular attention in 1832, by the travellers' club-house. This was in the Italian style, for which Barry always has shown a predilection, and though one of the most pleasing buildings of its class in the city, it was surpassed by the magnificent reform club-house, which he designed 15 years later. The grandest of all the architectural works which he has yet completed, and that which best reveals his genius, is the new parliament house at Westminster, the most costly building that has been erected in England for centuries. The old houses of parliament were burned in 1834, and the design offered by Mr. Barry for a new edifice was accepted. The work upon the new houses was begun in 1840, but is still incomplete, and cannot therefore be yet fairly judged. The Victoria tower and royal gallery was opened in state by the queen in 1852, when the honor of knighthood was conferred upon the architect. He was also chosen a royal academician in 1841, a fellow of the royal society in 1849, and is a member of the London institute of architects, and of the academies of the fine arts at Brussels, Berlin, Stockholm, St. Petersburg, and Rome.

BARRY, GERALD, better known by the name of **GERALDUS CAMBRENNIS**, a learned Welsh ecclesiastic, born at the castle of Manorbier, in Pembrokeshire, about 1146, died about 1220. At the age of 20, he was sent to the university of Paris, where he remained 8 years, and became an excellent rhetorician. On his return to England, he entered into holy orders; and observing that his countrymen, the Welsh, were very backward in paying tithes to the church, he procured of the archbishop of Canterbury an ap-

pointment as legate in Wales for rectifying this disorder. He commenced the work of reform with great energy, and delivered over to the evil one all who refused the tithes. The archdeacon of Brecon having committed the sin of matrimony, and refusing to put away his wife, was deprived of his archdeaconry, and succeeded in that office by the zealous legate. In 1176, his election to the bishopric of St. David's not being ratified by the king, he went again to Paris, where, if his egotistic memoirs are to be credited, he won prodigious fame by his eloquence. About 1184, he was sent into Ireland with Prince John, where he composed a work on the topography of that country. In 1188, in company with Baldwin, archbishop of Canterbury, he traversed Wales, preaching a crusade for the recovery of the Holy Land. He modestly tells us that he was more successful than the primate, and that his Latin orations (which they could not understand) moved the people to tears. Having set his heart on the see of St. David's, he refused many eligible appointments in the church. At last he was unanimously elected to the office he coveted, but was thereby involved in litigation with the archbishop of Canterbury and defeated in 1208. He passed the last 17 years of his life in studious privacy.

BARRY, JAMES, historical painter, born at Cork, Ireland, Oct. 11, 1741, died in London, Feb. 22, 1806. He made several voyages with his father, who was master of a small coasting vessel, but disliking the sea, applied himself to literature and drawing, and at the age of 15 had executed several designs for a small volume of stories brought out by a publisher at Cork. There are traditions of several early paintings in oil, but the earliest authentic record is of that which he exhibited at the society of arts, in Dublin—a historical picture representing the king of Cashel converted by St. Patrick, and receiving baptism from his hands. In the exhibition, this picture was the centre of attraction, and so unpromising was the appearance of Barry, that when he presented himself as the artist, every one looked at him with incredulous surprise. He burst into tears, quitted the room in an agony of indignation, and was calmed down by Edmund Burke, who was in Dublin at the time and sought him out. The picture was accidentally destroyed by fire, and not even a sketch of it remains. Burke took Barry with him to England, at the age of 28, where he obtained employment for him in copying pictures, and finally sent him to Rome. There, for 5 years, he was supported at the joint expense of Edmund Burke and his brother William. During the greater part of his residence in Italy, he was constantly quarrelling with his brother artists, his temper being very impracticable. He was diligent, as a student, but chiefly admired the works of Titian, finding faults in Raphael and Michel Angelo, which the world did not observe. He presented only one picture of note, while abroad,—“*Philoctetes in the isle of Lemnos.*” Returning to London, in

1770, great expectations were formed of him. After having produced 2 classical pictures, he painted the death of Wolfe at the battle of Quebec, a popular subject spoiled by his mode of treatment, for he represented all the combatants in a state of nudity. The remarks made on this by some of the members of the academy so much offended him, that he never sent another picture to their exhibition. About a year afterward, when the bishop of London refused to allow scriptural paintings as decorations for St. Paul's cathedral, many artists having volunteered their services, Barry published an “*Inquiry into the real and imaginary obstructions to the progress of Art in England,*” in which he refuted Winckelmann's theory (that the climate unfitted the English for attaining to high eminence in the arts), violently denounced connoisseurs and antiquaries, and bitterly inveighed against the success of portrait painters as inimical to the progress of historic art. Barry had not succeeded in the few portraits he had taken, and was somewhat jealous of the reputation which Reynolds had acquired in the same line. He resolved to show the grand style, in competition with his brothers of the easel, and offered to adorn the great room of the society of arts in London with a series of historical paintings executed by himself. The offer was accepted, and he wholly devoted himself, during nearly 7 years (1777-1783), to execute it. The result was a series of 6 large pictures on the subject of human improvement:—3 of the subjects are poetical; the others historical: the story of “*Orpheus,*” a “*Grecian Harvest Home,*” the “*Victors at Olympia,*” “*Navigation, or the Triumph of the Thames,*” the “*Distribution of Premiums by the Society of Arts,*” and “*Elysium, or the state of Final Retribution.*” One of the pictures (the *Victors at Olympia*) Canova declared to be so noble that he would willingly have made a journey to England to see it. While executing these works, Barry had to make drawings and engravings, at night, for mere subsistence, and found some difficulty in obtaining from the society that allowance for colors and models for which he had expressly stipulated. The only gratuity he actually received was 2 donations of 50 guineas each, a gold medal, and 200 guineas at the conclusion of the work. He was allowed to exhibit the pictures to the public, by which he realized £500, and published a set of engravings from them, which brought him in £200. With these sums he purchased an annuity of £80, quite sufficient for his moderate wants. He gained reputation, but not money, by a dissertation on his paintings. In 1783 he was elected professor of painting in the royal academy, but, being then engaged on his great work, was unable to prepare the requisite lectures until 1784. His continual invectives against his colleagues lost him the professorship in which they had placed him. The ostensible offence was the publication of a letter to the dilettanti society, in which he accused the

royal academy of dissipating its funds, and proposed that, in future, their votes should be given on oath. When the academy erased his name from their roll, the public subscribed £1,000 to compensate him. The first Sir Robert Peel allowed him an annuity of corresponding value, but the painter did not survive to receive more than the first year's income. He died in his house in Castle street, Oxford market, London,—a dwelling, says Southey, which was never cleaned, where he slept on a bedstead with no other furniture than a blanket nailed on one side. He lived like a man suffering under extreme poverty, but, in his direst need, refused to incur the obligation of debt. In his latter years he mused much and wrought little, but was more or less occupied on a series of subjects to exemplify the progress of theology, of which he had executed "Pandora," or the heathen Eve. He had also commenced a series of "Illustrations of Milton."

BARRY, JOHN, the first American commodore, born in Wexford, Ireland, in 1745, died Sept. 18, 1808. He early displayed a great partiality for the sea, and at the age of 11 adopted America as his home, and made a number of voyages in merchant ships, until the commencement of the revolution. He at once embraced the cause of the colonies, offered his services, and was one of the first officers commissioned by congress in the naval service. In Feb. 1776, he was appointed to the command of the Lexington, 14, and after a sharp action took the Edward tender. He was soon transferred to the Effingham frigate, and in 1777, in the Delaware, at the head of 4 boats, carried an enemy's man-of-war schooner, in the most gallant style, without the loss of a man. Finding that the ice in the river and bay impeded sailing operations, and unwilling to remain inactive, he joined the army for a short period, as aide-de-camp to Gen. Cadwalader, and rendered good service in the operations about Trenton. His vessel being destroyed, he was appointed to the command of the Raleigh, of 82 guns, but this ship was also lost, he being obliged to run her on shore in Penobscot bay, while pursued by British cruisers. In 1781 he sailed in the Alliance, carrying Col. Henry Laurens, of South Carolina, on an embassy to the coast of France. While returning, he fought, on May 29, a severe battle with the Atalanta, of between 20 and 30 guns, and her consort, the Trepassy, taking both of them. In this action he was badly wounded. On Dec. 31 of the same year, he sailed again in the Alliance from Boston, with the Marquis de la Fayette and Comte de Noailles on board, who were returning to France on important public business. On his return he took a number of prizes, and captured a frigate of equal size with his own vessel, which was, however, rescued by a superior force. He continued to serve during the war with the highest credit, and he is said to have rejected the most tempting offers from the British government, nobly refusing to turn traitor to the

cause of his adopted country. After the cessation of hostilities he was employed by the government in superintending the building of the frigate United States, of which he retained the command until after the accession of Mr. Jefferson to the presidential chair, when she was laid up in ordinary. When the new marine of 1794, which was the foundation of the present navy, was established, Commodore Barry was named as the senior officer, in which station he died.

BARRY, MARIE JEANNE GOMARD DE VAUBERNIER, afterward the countess du Barry, was the putative daughter of a minor functionary of Vanocouleurs, where she was born Aug. 19, 1746, guillotined Dec. 7, 1793. After the death of her father, she was for a short time placed, by a godfather, M. Dumonceau, in a convent, which, however, she left in the 15th year of her age, to learn the trade of milliner, at Paris. Arrived in that city, she soon became the willing victim of its seductions, and under the name of Mlle. Lange she engaged in a disreputable connection with a fallen lady of fortune. From that condition she was taken, as a mistress, by Count Jean du Barry, a profligate nobleman of the court of Louis XV. Her beauty, her manners, and her wit, combined to fascinate the passions of that weak and voluptuous monarch, who caused her to be married to Count Guillaume du Barry, a brother of Count Jean, and transferred her to the court, as the countess du Barry. She there acquired a complete ascendancy over the king, and, through him, over the courtly society. The part which the marchioness de Pompadour had recently played was renewed by this favorite. She was probably faithful to the king, but her prodigality was ruinous; for, beside the presents lavished upon her by himself, his officials, and those who sought favor, she drew more than 18,000,000 of francs from the treasury, to meet the exigencies of her husband and brother-in-law. Her benevolence, however, had as much to do with her expenditures as her love of pleasure. Her godfather Dumonceau she richly rewarded; she established her mother comfortably at Paris, and she gave large sums to artists and literary men. In public her conduct was dignified and reserved, and gained her many friends, but in private she was often frivolous to an extreme. It was her influence which caused the exile of the Duke de Choiseul, then prime-minister; but she was never fond of political intrigues. On the death of Louis XV., in 1774, his successor banished her to the abbey Pont aux Dames, near Meaux, where, for a little time, she was treated with considerable rigor by Louis XVI., but in 1776 he allowed her to occupy her former estate of Lucienne. In that place she endeavored, by a life of active charity and general kindness, to compensate the errors of her previous career. In 1790, when France was in full revolution, 8 persons in military dress entered her apartment and took her valuables, to the amount of 400,-

000 francs. These were traced to England, whither she went to recover them, and where she was able to assist the refugee loyalists. Returning to Lucienne, she continued to befriend the adherents of Marie Antoinette and of Louis, and was thereby brought under the suspicions of the revolutionists. She was closely watched, and subsequently seized and conducted before the revolutionary tribunal. Convicted, in the summary manner of the times, of corresponding with the enemies of the republic, she was condemned to death. During her trial her deportment had been cool and intrepid, but as soon as her doom was pronounced she fainted, and was carried to prison in a state of insensibility. On the way to execution her self-command appeared to forsake her altogether; her cries to the officers and to the populace were distressing; and at the last moment it was only by force that she was placed upon the scaffold. Of all the French women of the period, called to suffer death, she alone seems to have lost all heroism and dignity. Madame du Barry left one daughter, born before her acquaintance with Louis.

BARRY, MARTIN, English physiologist, born in Hampshire, March, 1802, died in Suffolk, April 27, 1855. He studied at Edinburgh and Heidelberg, and early gave his attention to the question of animal development and embryology. His publications on these subjects, which procured him the gold medal of the royal society and an election as fellow in 1840, have been of great value.

BARRY, SPRANGER, actor, born in Dublin, Nov. 20, 1719, died in London, 1777. Having failed in his native city as a silversmith, he made his *début* on the Irish boards, in 1744, as "Othello." This was highly successful, owing to his fine personal appearance, graceful manner, silvery voice, and clear intellect. In 1746 he proceeded to London, where, for some time, he became the rival of Garrick. His "Romeo," in particular, is said never to have been surpassed. His favorite "Juliet" was Mrs. Cibber. He pleased actors as well as audiences, and equalled Garrick, if he did not surpass him. In 1758 he joined Woodward in the (unsuccessful) project of building Crow-street theatre, Dublin. In 1766 he returned to London, and, having married Mrs. Dancer, an excellent actress, both were received into the Drury lane company at a joint salary of £1,500 per annum. In 1774 he removed to Covent Garden, where his performance of the character of "Orestes," in "The Distressed Mother," was so perfect as to throw a new lustre over his last efforts. In less than 8 years after this crowning effort he died. For many years he had suffered severely from hereditary gout. He was profuse in his expenditure and fond of display. His address and conversation were exceedingly pleasing.

BARRY, WILLIAM TAYLOR, senator and postmaster-general of the United States, born in Lunenburg county, Virginia, Feb. 5, 1785, died at Liverpool, England, Aug. 30, 1835. He

went to Kentucky at the age of 11, and after completing his education at the college of William and Mary, in Virginia, in 1807, entered the bar, where his gift of popular eloquence soon brought him into notice. After serving several terms in the Kentucky legislature, he was elected to congress in 1810, served in the war of 1812 as aide-de-camp to Gov. Shelby, was chosen a United States senator—an office which he resigned to become one of the superior judges of the courts of Kentucky, and was made successively lieutenant-governor, secretary of state, and chief justice. President Jackson appointed him his first postmaster-general, and subsequently minister to Spain. He was on the way to Madrid when he died.

BARS, or **BARSEN**, formerly a county, now a circle in the province of Presburg, Hungary, area 1,089 sq. m., pop. in 1825, 137,210; in 1850, 120,614. It is mountainous, with fertile plains; has gold, silver, lead, and iron mines. Rivers, the Gran, Neutra, and Zaitva.—Bars is also the name of a former royal free city on the Gran; pop. 1,000.

BARSUMA, a Nestorian heretic of the 5th century, metropolitan bishop of Nisibis, died about 489. He fled with his associates from Edessa to Persia, and prevailed upon the king of Persia to persecute and banish from his kingdom the partisans of the church of the west. He maintained that priests should be permitted to marry, and himself married a man. He left discourses, homilies, and hymns, and a liturgy in the Syriac language.

BARTAN, or **BARTIN**, a river of Anatolia called Dolap by the Turks, identical with the ancient Parthenius; it rises in Mount Olympos. The river flows through a beautiful and fertile country, and empties into the Euxine.—It is the name of a town, near its mouth, with 66 houses, 5 mosques, and some Roman remains.

BARTAS, **GUILLAUME DE SALLUSTE** DE, author of a poem called "The Week; or, The Creation of the World," was an officer in the service of Henry IV. of France, born in 1546. The poem, which passed through 30 editions in 6 years, has long since been forgotten. It was translated into English by John Sylvester. Bartas died in 1590, of wounds received in the battle of Ivry.

BARTER, a rule in older treatises on arithmetic, relating to the exchange of one commodity for another.

BARTFELD, a town in the circle of Sáros in the N. E. part of Hungary; pop. 4,000. It is situated on the river Tepla, was built early in the 18th century, and formerly had reputation for learning. In the 16th century it was famous for its printing establishment, which issued Protestant publications, and it still possesses a fine collection of records. It is the residence of many old families, who possess large estates and it also carries on a brisk trade in wine and cloths. There are fine mineral springs in the vicinity, much visited by the Poles.

BARTH, HENRICH, a German traveler.

plorer of central Africa, born at Hamburg, April 18, 1821. At the university of Berlin his favorite pursuit was classical geography, and this led him to travel through the littoral countries of the Mediterranean. Having previously visited Italy and Sicily, he commenced his African researches in 1845, at Tangier, in Morocco, and proceeded along the Algerian coasts, with excursions into the interior to Tunis, Tripoli, and across the sandy desert to Bengazi. While proceeding thence to Cairo in Egypt he was attacked by a band of Arab robbers, severely wounded, and stripped of his papers relating to the latter part of his travels. He continued his researches, at an expenditure of his private resources to the extent of \$14,000, and starting from Cairo investigated Egypt, Sinai, Palestine, Asia Minor, the islands of the Ægean sea, and Greece. The first volume of his travels was published in 1849, under the title *Wanderungen durch die Küstenländer des Mittelmeeres*, and he was engaged in the preparation of the second when the proposition was received by him from the British foreign office, to undertake an expedition of discovery into central Africa, as scientific companion to Mr. James Richardson, a British subject and man of enterprise. Dr. Barth informs us in the preface to his great work, hereafter mentioned, that the exploration of central Africa became the dream of his life, from the time of a casual conversation with a Houssa slave whom he met in Tripoli. It was on Oct. 5, 1849, that Chevalier Bunsen communicated to Dr. Barth the readiness of the British government to pay the expenses of a German man of science, provided that he would furnish the sum of \$1,000 toward his own outfit. The geographical society of Berlin advanced this sum, and the physical society of Königsberg and the king of Prussia contributed a sum of \$700 each to the enterprise. Dr. Barth at first yielded to the earnest entreaties of his father and relatives, and hesitated to accept the offer. Dr. Overweg then volunteered, and his services were accepted by the British government on the same conditions as those offered to Barth. Barth's love of science at length overcame his sentiment of filial duty, and he closed with Lord Palmerston. Richardson, Barth, and Overweg, met at Tripoli, in the winter and spring of 1849-'50, and had a boat constructed there for navigating Lake Tchad. The party started for the interior April 2, 1850, with the great semi-annual caravan to Bornoo. On May 6 they reached Moorzook, the capital of Fezzan, which they left June 13. From here they proceeded in a S.W. direction through the unknown kingdom of Air or Asben, which had never been visited by Europeans. While making this stage, Dr. Barth lost himself in the desert, and remained for 28 hours without water, preserving his life by drinking his own blood. As the Tuariks had never known any one survive more than 12 hours' deprivation of water in this situation, they regarded him as a demi-god or

supernatural being. The aspect of the boat carried about with them by the explorers, excited the same sentiment of wonder and awe in the minds of these savage tribes. Before reaching Agadez, the party were attacked and pillaged by some fanatical Moslems, and narrowly escaped death. They were detained by the ferocious chief of Tintellust, from Sept. to Dec. 1850. Dr. Barth at length procured the release of himself and fellow-travellers by making a pilgrimage to the sultan of Ennoor, the lord paramount of the chief of Tintellust, and procuring the sultan's order for a release. After this the party made a journey to Agadez, and parted there with Richardson, making Kuka their place of rendezvous and future rejoining for April, 1851. Richardson died at Ungurutua, March 4, 1851, when within 6 days of Kuka, while Dr. Barth, who had taken the route *via* Kashua and Kano, hurried to Ungurutua, and saved the papers of the head of the expedition and forwarded them to England, where they were speedily published. Dr. Overweg had parted from Barth on Jan. 13, and explored Guber and Mariadi, 2 independent pagan countries in the direction of Sakatoo, where he spent 2 months, and rejoined Dr. Barth at Kuka, *via* Zinder, May 7. Barth had arrived at Kuka, April 2, and was hospitably received by the sultan of Bornoo, and the vizier, who manifested his affection for the European by making him a loan of \$100, a welcome deed, for Barth's funds were exhausted, and the new British remittances had not come to hand. Both the travellers, while travelling in Houssa, had noticed articles of American manufactures among the wildest of the tribes, and suppose that these articles have penetrated thither in exchange for slaves. The two travellers again separated. Dr. Barth went to explore the kingdom of Adamawa, of which he had heard on his way from Kano to Kuka. The sultan of Bornoo gave him an escort of a captain and 8 men, and a letter of introduction to the ruler of Adamawa. He started May 29, and travelled southward for 4 weeks, through forests infested with lions and elephants. He found the Mohammedan population of Adamawa strikingly superior to the pagan. Here, as elsewhere, the natives looked upon the European as something superhuman, and he might have obtained an abundance of money had he condescended to apply his literary talents to the writing of rhythmical charms. On June 18, Dr. Barth was rewarded by a grand discovery: he came upon the great river Benué at its junction with its affluent the Faro. He immediately conjectured that this must be the same as the Chadda or eastern branch of the Niger, as described by the Landers and others. This has since been ascertained to be the fact, by Mr. Macgregor Laird's steamer, the Pleiad, which ascended the Chadda for 250 miles beyond the point reached by Allen and Oldfield in 1833, and proved that it was navigable for 5 months of the year up to the borders of Bornoo and the very heart of the

continent. He reached Yola, the capital of Adamawa, and delivered his letter of introduction from the sultan of Bornoo to the sultan of Adamawa. Unfortunately, there was some breach of the Adamawan rules of good breeding in the letter, and on Dr. Barth's head fell the punishment of this offence. He was ordered to leave Adamawa in 8 days, on pain of instant death. Sick at heart, he turned back by the same route, and arrived at Kuka on July 22. During Barth's absence, Dr. Overweg penetrated from Kuka to Lake Tchad, launched the boat of the expedition, which had been carried across country from Tripoli, and employed 5 weeks in exploring its islands and shores. Overweg was the first European who navigated this lake. The 2 Germans returned to Kuka, and stayed there till November. They next planned an expedition to Kanem and Borgoo, an unexplored country lying N. E. of Lake Tchad, and extending midway to Abyssinia. They had almost reached the capital of Kanem, when they were attacked by Arabs and forced back. On their return to Kuka they found the sultan of Bornoo preparing to send an army to subjugate Mandara, a country on the S. E. of Bornoo. They joined the campaign, penetrated with an army of 20,000 men 200 miles, and returned with a booty of 5,000 slaves and 10,000 head of cattle, arriving at Kuka Feb. 1, 1852. Toward the end of March, Barth again left Kuka by himself, and, after great dangers, reached Massena, the capital of Baghirmi, a powerful kingdom to the E. of Bornoo, which had never before been visited by a European. He was not allowed to penetrate further E., and again returned to Kuka, where he arrived, Aug. 20. Meantime, Overweg had attempted to penetrate the great Fellatah kingdom of Yakoba, lying on the river Benué, but was driven back, and returned to Kuka with a constitution hopelessly shattered. He died, Sept. 27, 1852, in the arms of Dr. Barth, who buried him near the village of Maduani on Lake Tchad. At this time, when alone and despondent, letters arrived from the British government, continuing Dr. Barth's commission, and accompanied with a supply of funds. He determined to prosecute the expedition on the strength of his own constitution alone, forwarded his papers to England, and begged that another assistant might be provided for him. Further residence at Kuka, in the neighborhood of which he had seen his brethren cut off, was painful to him, and he determined to leave for Saccatoo and Timbuctoo. His feelings at this time are thus expressed in his letters: "As the only living member of the mission, I feel, since the carrying out of our designs now rests altogether upon me, that my strength is doubled and my resolution firmer to follow up still further the results already obtained. My means consist of a pretty large collection of presents, \$200, 4 camels, and 4 horses. My health is excellent, and with 5 trusty, long-trying, and well-armed servants, abundantly supplied with powder and

ball, I am resolved, full of courage and confidence in the result, to set out for Timbuctoo." He finally left Kuka, Nov. 25, 1852, and reached Saccatoo, *via* Kaahna and Wurno, in April, 1853, and entered Timbuctoo, Sept. 7, where the inhabitants deemed him the envoy of the Turkish sultan. He distributed bountiful presents on his way, and was called *Abd-el-kerim* (servant of the merciful); when he fell ill, the people surrounded his hut, crying in sympathetic sorrow, "*Abd-el-Kerim shall not die!*" Nothing was heard of him for a long time, and a rumor reached Europe, *via* Bornoo and Tripoli, that he had fallen a victim to the desert tribes around Timbuctoo. In the mean time, Dr. Edward Vogel, a native of Leipzig, but then an assistant of the British royal astronomer, Mr. Hind, volunteered to go to Dr. Barth's assistance with sappers and miners. They were joined at Tripoli by Mr. Warrington, son of the British consul at that place. They reached Kuka in Dec. 1853. Here Warrington died. After a painful interval, the world learned with joy that Barth was alive, and had left Timbuctoo, after a stay of nearly a year. The report of his death was the invention of the vizier of Bornoo, who desired that the supplies of the expedition should escheat to himself. Fortunately for Barth and for the cause of science this selfish savage was deposed by the opposition party of his own state. During his long sojourn at Timbuctoo, Barth lived under the protection of the sheik, who gave him an escort on his way back to Saccatoo. He succeeded in exploring the whole middle course of the Kowara, or Niger, which no one but the lamented Park ever accomplished; but Park's journals perished with him. In his journeying in these regions he discovered 2 large kingdoms, Gando and Hamd-Allah, whose existence was before unknown. He reached Kano on his return homeward, Oct. 17, 1854. On his arrival he was disappointed in not meeting Vogel and his rescue party; but a benevolent Jew at Kano lightened his difficulties by a timely loan, at 100 per cent. At last, on Dec. 1, 1854, he met Vogel, the first white man he had seen since Overweg's death. He wintered in Kuka, and started in April, 1855, for Europe, reached Moorzook, on July 20, and landed at Marseilles, Sept. 8, 1855, after an absence from the civilized world of nearly 6 years. He was welcomed with universal joy. After paying a visit to his native land, he took up his residence in London, in order to superintend the publication of his explorations in the English tongue. Three of the contemplated 5 volumes appeared in the early part of 1857, and bring the narrative down to the death of Dr. Overweg. See Barth's "Travels and Discoveries in North and Central Africa."

BARTH, or BART, JEAN, a French seaman born at Dunkirk Oct. 20, 1650, died there, April 27, 1702. He was the son of a fisherman, and at an early age evinced a love of adventure, which led him to follow the sea. He desired to enter

the royal service, but at this period the lower classes were never commissioned in the royal navy, and Barth was constrained to take the command of a privateer. In this position opportunities soon occurred for distinguishing himself, and his name became known to Louis XIV., who commissioned him to cruise in the Mediterranean. Here his bravery soon raised him in the favor of the king, and he was appointed captain of the squadron in 1697. France being now at war with the Dutch, a field was opened of which Barth was not slow to take advantage, and the most unexampled feats of daring soon made him the terror of his enemies. On one occasion, a famine existing in France, Barth recaptured from the Dutch 100 sail of vessels, loaded with grain. At another time when Dunkirk was blockaded, taking advantage of a fog, he sailed through the English and Dutch fleets, and destroyed 86 merchantmen: then making a descent near Newcastle, Northumberland, he destroyed 200 houses, and returned safely with property valued at 500,000 crowns. Barth was rough in manners, and entirely uneducated; indeed, he could with difficulty scrawl his own name; but he was as imple-ininded and honest as he was brave. A statue to his memory, by David d'Angers, was erected at Dunkirk in 1845.

BARTH, KARL, a German engraver, born in 1792, at Hildburghausen. In conjunction with the celebrated Amster, he executed the plates of the *Nibelungenlied*, after the designs of Cornelius. His engravings of the head of Raphael, of Friedrich Schlegel, of the poet Rückert, of Adelbert von Chamisso, of Prince Alexander von Hurn and Taxis, and especially his plates of the seven years of famine in Egypt, after a design of Overbeck, belong to his most remarkable works. He has also written some poems under the name of Karl Barbarino.

BARTHE, FELIX, a French lawyer, politician, and public minister, born at Narbonne, July 28, 1795, and studied law at Toulouse. He was admitted to the Paris bar when only 22, and made his fame by defending the accused in state trials. He took an active part in the revolution of 1830, and belonged to the party of the *National* newspaper. After the completion of the revolution he was made *Procureur du roi*, member of the chamber of deputies, and minister of public instruction. In the Casimir Périer administration he was minister of justice. In 1834 he left the ministry and became president of the court of accounts. In the administration of Follé, Barthe became minister of justice and religion. He took part in the amnesty granted under this administration, and retired from public service on its overthrow in 1839. In 1844 he became vice-president of the chamber of peers. During the republic of 1848-'9, he lived in retirement, but in 1851, returned to public life again, and in 1854, became once more president of the court of accounts.

BARTHÉLEMY, AUGUSTE MARSEILLE, a French satirist, born at Marseilles in 1796.

Extraordinary facility in verse-making, an excitable fancy, an incredible mobility of opinions, were the characteristics of this poet, who once enjoyed great popularity, but is now as entirely forgotten as if years had passed over his grave. He early gave evidence of his utter want of conscience, by writing almost at the same time a sharp *Satire contre les Capucins*, in which the government of the Bourbons was not spared, and an article against the freedom of the press, which appeared in the *Drapeau blanc*, a thorough royalist paper, and was so much to the taste of the court that he received a gift of 1,500 francs from Charles X. He then repaired to Paris, and following for a while the same course, he sang the praise of the new king in his *Ode sur le sacre*, 1825; but this brought him the paltry sum of 300 francs; and disgusted at such meanness, he secretly vowed that sooner or later he would take vengeance on the parsimonious king. Just at that moment, Méry published a witty political satire, under the title of *Épître à Sidi Mahmoud*, the Persian ambassador at Paris; and forthwith Barthélemy answered by a no less pungent one, *Adieux à Sidi Mahmoud*. This was followed by a poetical partnership between them, the first effusion of which was the *Réponse de Sidi Mahmoud*, and the *Consécration*. They now kept up a poetical warfare against the government in satires of various kinds. The unbounded popularity won by *La Villéluade*, a virulent attack on the ministry of Villèle, caused the authors to be regarded as the wittiest supporters of the opposition. *La Peyronnède, ou épître à M. de Peyronnet* and the *Étrennes à M. de Villèle*, overflowing with sarcasm, were equally well received. But the poets had higher aspirations, and published, in 1828, *Napoléon en Égypte*, copies of which were forwarded to every member of the Bonaparte family in Europe or America; and Barthélemy repaired personally to Vienna, in the hope of being admitted to the presence of the duke of Reichstadt. But he was refused all communication with the young prince, and could only look on him for a few minutes from his seat at the theatre. Returning to France, Barthélemy reported his impressions in a poem, entitled *Le Fils de l'homme*, for which he was arraigned, and sentenced to 8 months' imprisonment and a fine of 1,000 francs. He had meanwhile bitterly assailed the minister of war, Bourmont, in his poem of *Waterloo*, and the prefect of police in his *Épître à M. de Saintine*. He was consequently treated with severity, and when his term of confinement expired, he was detained 8 months longer for the non-payment of his fine; but this added only to his popularity. The revolution of July, 1830, was hailed by Barthélemy and Méry in a poem, *L'Insurrection*, in which they paid a compliment to Louis Philippe, for which the former was rewarded by a pension of 1,200 francs. For a while Barthélemy was silent; but in April, 1831, he burst out with the first of a series of satires, called *La Némésis*, announcing that a

number would be issued every week; and to the astonishment of the public, the promise was fulfilled for a whole year; every week appeared a new satire full of wit, sarcasm, and violent denunciations of the government and its adherents. This raised Barthélemy to the pinnacle of his glory. But he had scarcely laid down the satirical lash, when it was rumored that he had been bought up by the government. Such was indeed the fact, which was soon proved by the publication of his prose pamphlet, *La justification de l'état de siège*, being an impudent vindication of the establishment of martial law in Paris, subsequent to the insurrection of June, 1832. There was a clamor of universal reprobation, to which the unterrified renegade answered by *Ma justification*, a long poem, which was but a brazen-faced apology for his treachery. From that time Barthélemy was morally dead. His literary performances, whatever merits they possessed, could no longer command attention. In vain he published *Les douze journées de la révolution*, a series of poems, in which he conjured up events adapted to move the popular feelings; in vain he called on the most intelligent part of the reading public by his verse-translation of the *Æneid*, the fruit of 8 years' labor: all his efforts passed unnoticed; he was sentenced to oblivion. He sealed his degradation, when, on being paid by a notorious quack doctor, he translated into French rhyme Frascator's Latin poem, *La syphilis*. His last performance was *Le deux Décembre*, a poem of 400 lines, in honor of the *coup d'état*, which appeared Feb. 22, 1852, in the government paper *La Patrie*, and was scarcely relished even by Bonapartists.

BARTHÉLEMY, FRANÇOIS, marquis de, French diplomatist, born Oct. 20, 1747, at Antibes (Provence), died April 8, 1830, at Paris. He was brought up by his uncle, the author of *Anacharsis*; and the protection of the duke of Choiseul, established him in diplomacy. The revolution did not hinder his success in life; in 1798 he was minister plenipotentiary to Switzerland. He successively negotiated the peace of Basel with Prussia, Spain, and the elector of Hesse, the first treaties concluded by the French republic. This won for him an enviable reputation; but he was especially popular among the *Clichyens* or royalist party, by which he was, in 1797, elected member of the directory; consequently on the republican *coup d'état* of the 18th Fructidor, he was ejected from the government, arrested, put in prison and transported with Pichegru and Ramel, to Guiana, whence he escaped to the United States. Shortly afterward he was in England, and after the 18th Brumaire, he was recalled by the first consul, who made him a senator. On the establishment of the empire, he received the title of count, and showed great devotion to Napoleon during the course of his prosperity, but as soon as misfortune threatened the great man, Barthélemy sided at once with his enemies; in 1814, as vice-president of the senate, he presid-

ed over the session in which the emperor was declared dethroned and the army and people released from their oath of allegiance. On the first return of Louis XVIII., he was created a peer of France and received a little later the grand cordon of the legion of honor. During the Hundred Days he was left aside by Napoleon, which was another virtue in the eyes of his new sovereign. Barthélemy at once reentered the chamber of peers, was appointed minister of state and raised to a marquisate. He belonged to that party of royalists who believed that too much liberty had been granted by the charter; therefore in 1819, he moved an amendment to the electoral law, so as to materially curtail the number of electors; which motion was known at the time as the Barthélemy proposition. He never married, and left his title and fortune to his grand-nephew, who was a member of the French constituent assembly of 1848, under the name of Sauvage-Barthélemy.

BARTHÉLEMY, JEAN JACQUES, an eminent French scholar and writer, born Jan. 20, 1716, in Provence, died April 30, 1795, at Paris. After completing a course of classical and theological learning, he studied oriental languages and archæology, and, coming to Paris, was welcomed by Gros de Boze, the keeper of the collection of coins and medals in the royal library, who soon had him appointed his assistant. He was only 30 years old, but enjoyed such a reputation that, in 1748, he was elected member of the academy of inscriptions and belles-lettres. In 1753 he succeeded his friend Boze in his keepership, and devoted himself entirely to that office. He travelled in Italy to collect medals and information. There he became acquainted with the duke de Choiseul, who at once took great interest in his welfare; but, modest as he was, he did not profit much by the favor of the duke. He was known only as a very learned man, when appeared, in 1788, the book on which he had spent 30 years of his life, and which was to place him among the most elegant writers of his age; we mean, *Le voyage du jeune Anacharsis*, which at once gained for him fame and popularity, not only in France, but in foreign countries. The next year he was called to the French academy. During the revolution he lost his post and his fortune; he was even arrested and taken to the prison of the Madelonnettes. A few hours later he regained his liberty, and was offered by Paré, then the home secretary, the post of librarian in the national library; but he declined the offer, and died a few months afterward, while reading Horace's "Epistles." Beside his "Travels of Anacharsis," which have passed through many editions and been translated into almost every European language, Barthélemy wrote several interesting disquisitions on archæology and numismatics, among which his *Essai d'une paléographie numismatique* is worthy of mention.

BARTHÉLEMY-ST. HILAIRE, JULES, a French politician and philosopher, born Aug. 19, 1805, at Paris. The first part of his life

was devoted to politics; he became one of the assistant editors of the *Globe* newspaper, which held a conspicuous place in the opposition press, previous to the revolution of 1830; and in that capacity he signed the protest of the journalists against the royal ordinances of July 26. He was dissatisfied with the accession of Louis Philippe; so he entered the society *Aide-toi, le Ciel t'aidera*, and became one of its most assiduous members. In 1832, associating himself with Cauchois Lemaire and Victor Rodde, he founded the *Bon Sens* newspaper, which was at once noted for the boldness of its opposition to the government. He afterward became an occasional contributor to the *National*, the *Constitutionnel*, and the *Courrier Français*, the 3 leading opposition papers at that time, when suddenly, in 1833, a complete change occurred in his mental disposition. He gave up politics entirely and devoted himself to philosophy. For 10 years he was assistant professor of literature in the polytechnic school, when he was promoted to the professorship of Greek and Latin philosophy in the college of France, March 23, 1839. In 1840 he was general secretary *pro tem.* to the minister of public instruction. He had already published his *Mémoire sur l'ordre des livres de la politique d'Aristote*, and another memoir *De la logique d'Aristote*, for which he received a prize at the hands of the French institute, and he was then engaged in his translation of the complete works of Aristotle. The revolution of 1848 brought him back to political life. He was chosen to the national assembly, and on Nov. 25, 1848, moved to impeach Gen. Cavaignac for want of prudence and energy in the insurrection of June previous. After the *coup d'état* of Dec. 1851, he refused to take the oath of allegiance to the new government. Since then he has returned entirely to philosophical pursuits.

BARTHEZ, PAUL JOSEPH, a French physician, born at Montpellier, Dec. 11, 1784, died Oct. 15, 1806. He studied medicine in his native city and in Paris, and in 1757 became royal censor and a contributor to the *Journal des savants* and the *Encyclopédie méthodique*. Three years later he became a member of the faculty in the medical school of Montpellier, and soon obtained great renown, both as a professor and as a practising physician. He developed a new philosophical method in his *Nouveaux éléments de la science de l'homme*. His haughty character led him into disagreement with his colleagues, in consequence of which he removed to Paris, where he became consulting physician of the king, member of the council of state, and fellow of most of the learned societies of Europe. He went into retirement during the revolution. He was one of the most metaphysical of physicians. He explained the animal economy, not by physical or chemical laws, but by the theory of a vital principle. The foundation of his philosophy is physiological individuality, unity of action in the functions of life, and to the unknown source of life he subjected all the organs of the

body. He has been called the Hegel of medical science, and like that of the German philosopher, his system has made enthusiasts, suffered severe criticisms, and been the mother of other systems.

BARTHOLDY, JAKOB SALOMO, a German Hebrew, born at Berlin, May 13, 1779, died at Rome, July 27, 1825. He was educated at Halle, and visited Paris, Greece, and Italy. On his return from his travels he became a Protestant Christian. He joined the Austrian army against the French, and took part in the campaigns until the occupation of Paris in 1814; was present at the congress of Vienna and of Aix la Chapelle, and afterward lived at Rome, where he was a great patron of the fine arts. He called the art of fresco-painting into new activity by having his house decorated *al fresco* by Overbeck, Cornelius, Schadow, and Catel. His collections of bronzes, vases, and glasses were bought for the museum of Berlin.

BARTHOLIN, KASPAR, a Danish physician, born at Malmo, in Sweden, Feb. 12, 1585, died at Sorø, July 13, 1630. He travelled in Germany, France, England, and Italy, and taught medicine at Padua, Wittemberg, and Copenhagen. He was for many years rector of the university of Copenhagen, and left several works both on medical and literary subjects.—THOMAS, a Danish physician, the most distinguished of the sons of the preceding, born at Copenhagen, Oct. 20, 1619, died Dec. 4, 1680. After travelling throughout Europe, and making the acquaintance of the most learned men of his time, he became professor of anatomy in the university of Copenhagen. He made several discoveries in this science, and his merits were highly esteemed by the king, who appointed him the royal physician, and bestowed emoluments upon him after he had lost his valuable library by a fire. He left many medical works.

BARTHOLOMEW, a central county of Indiana, containing about 400 sq. miles, well supplied with mill streams, and drained by Driftwood fork of White river. The surface is diversified. The eastern part is generally level, but in the west are hills of some elevation. The soil is good, and produced in 1850, 1,178,902 bushels of corn, 102,531 of wheat, 59,850 of oats, and 2,558 tons of hay. The county was named in honor of Gen. Joseph Bartholomew. Capital, Columbus. Pop. in 1850, 12,428.

BARTHOLOMEW, a bayou of Arkansas and Louisiana. It rises in Jefferson co., Arkansas, and entering Louisiana, empties into the Washita at Washita city. It is navigable by steamboats for 250 miles.

BARTHOLOMEW, SAINT, one of the 12 apostles, a native of Galilee, and generally supposed to be the same as Nathaniel, who is mentioned by St. John among the first disciples of Christ. According to Eusebius and other ancient authors, he preached the gospel in the Indies, under which name they generally include not only India proper but also Arabia and Persia. It is related that in the 3d century

traces of Christianity were found in those countries, and that a copy of St. Matthew's gospel in Hebrew was preserved by the natives, who had a tradition that St. Bartholomew left it there when he came among them to preach the faith. He afterward journeyed into Phrygia, met St. Philip at Hieropolis, and thence passed into Lycaonia. Beyond this we are told little of his life and travels, and even the meagre accounts which we have received are of doubtful authenticity. The place and manner of his death are equally uncertain. Modern Greek writers assert that he was crucified at Albanopolis; others that he was flayed alive. As we know that it was not unusual in some parts of the East to unite these 2 barbarous punishments, it is possible that both accounts may be true. The relics of this apostle have undergone many vicissitudes. We hear of them at Duras in Mesopotamia, in the island of Lipari, and at Benevento. It is believed by Catholics that they rest beneath the high altar in the church of St. Bartholomew, at Rome. A gospel, anciently attributed to St. Bartholomew, was declared apocryphal by Pope Gelasius. A collection of writings also ascribed to him, but doubtless without reason, is known to have existed during the first 4 centuries of the Christian era, although no part of it now remains.

BARTHOLOMEW MASSACRE, THE SAINT, a frightful and nearly general assassination of the Huguenots in Paris, on St. Bartholomew's day, Aug. 24, 1572, in the reign of Charles IX. of France. Similar massacres followed in the provincial cities where the Huguenots had been most powerful, viz.: at Meaux, on the 25th; at La Charité, on the 26th; at Orleans, on the 27th; at Saumur and at Angers, on the 29th; at Lyons, on the 30th; at Troyes, on Sept. 2; at Bourges, on the 11th; at Rouen, on the 17th; at Romans, on the 30th; at Toulouse, on the 28d; at Bordeaux, Oct. 3. The original contriver of this tragical deed is supposed, by eminent historians, to have been the crafty and ambitious Catharine de' Medici, the mother of the young king, Charles IX. Whether it was a long premeditated plot, or one suddenly conceived on the eve of its execution, has been a matter of question among historians. The eminent Protestant historian, Sismondi, and the able Catholic historian, Cantu, agree in the latter view of the affair. Its immediate occasion was the attempt to assassinate the admiral de Coligni, who was fired upon and severely wounded in the street, on Aug. 22. It cannot be known with certainty who was the author of this criminal attempt. It was attributed by most persons to the duke of Guise, whose father had been murdered, as Sismondi avows, by the command of the admiral, and who was, in consequence of this, his deadly enemy. Cantu conjectures that Queen Catharine instigated the duke of Guise to assassinate the admiral de Coligni, intending to have the duke condemned and executed for the crime, and thus, by one blow, to

get rid of two great rivals to herself in that paramount influence which she wished to maintain over the king. During the reign of Francis II., after he had himself assumed the government, the differences between the religious parties in France had extended to the most fearful lengths, both factions, not content with waging internecine war with one another, calling in foreign enemies to assist them in the destruction of their fellow-countrymen; the Catholics, who were under the direction and leading of that bold, ambitious, and able family, the Guises, having constant recourse to the Spaniards for advice and material aid; while the Huguenots, led by Coligni, Condé, and the king of Navarre, as constantly brought in the English, who were at that time the hereditary enemies of France, and to employ whom, necessarily, subjected any party to the gravest imputation of treason to the country itself, not merely to the government. Catharine, who hated her eldest son, Francis, and was jealous to extremity of the Guises—who, through their niece, Mary Stuart, of Scotland, his young and lovely bride, in a great degree ruled the delicate, effeminate, and sickly king—at first intrigued with the Huguenot leaders, hoping to use them for her own purposes, and by their aid to obtain the reins of government. They, in like manner, gladly received her aid and countenance, without the smallest intention of lending themselves to her views, a moment after they should, by her means, have overthrown their religious and political adversaries; for it must be admitted that political animosities and even family feuds had nearly as much as religious fanaticism to do with the frightful dissensions of the time. So early as 1559, a plot was concocted by Catharine, the king of Navarre, the prince of Condé, the admiral Coligni, and the Montmorencis, for seizing and imprisoning the king and queen, sending the duke of Guise to the scaffold, and giving the government to a regency, composed of the junto above named. The conspiracy, however, known as that of Amboise, was disclosed by the treachery of a Huguenot lawyer, of the name of Avenelles; Catharine to conceal her own implication in the treason, united herself to the cardinal Lorraine, and turned the circumstances to the ruin and destruction of her late allies. A frightful massacre took place before the gates of the palace of Amboise, which the prince of Condé, whom it did not suit the court party at that time to implicate, was obliged to witness, in order to clear himself of suspicion. Shortly after this, it was determined between Catharine and the Guise to assassinate the prince of Condé in the very presence, on the occasion of the solemn entry of Francis and Mary into the city of Orleans, into which place a large force of Italian mercenaries, headed by Maréchal di Cipro, had been marched by the orders of the duke of Guise in preparation for the event. The murder, however, was expressly prohibited by Francis; who thereby incurred the yet deeper hatred of his

mother, added to the contempt, undisguised and avowed—such was the general laxity of opinion in that evil age—of the Catholic party, who swore “by the double cross of Lorraine, that they had a poor creature for their king!” Condé was, however, imprisoned for a time, but on regaining his liberty, soon had recourse to the sword; and France was, for many years, distracted by intestine wars, waged with the most remorseless barbarity, in one battle of which, that of Jarnac, the prince was shot in cold blood, after having surrendered, by the baron de Montesquieu, while, at that of Montcontour, the Huguenots were again so totally and irretrievably defeated, that their party had abandoned all hopes, until the long strife was closed by the peace of St. Germain-en-Laye, on terms far more favorable than they had hoped to obtain. This peace was concluded in 1570, and completely blinded the suspicions of the leaders, and laid them open to the schemes of the implacable and unforgiving Catharine, who had now, since the accession of the boy king, Charles IX., and her own regency, turned upon the Huguenots all the furious hatred which she had heretofore borne to the Guises. How far Catharine intended treason, from the beginning, cannot be ascertained; but the diabolical character of the woman justifies the worst suspicions, and it is known that the duke of Alva and the cardinal Lorraine had both counselled an open and general massacre of the Protestants, throughout the kingdom, on several previous occasions, which had led to the almost universally received opinion that the court of Spain and that of Rome, also, were privy and consenting to the scheme, as it ultimately was effected. It appears, however, from evidence which the best historians receive with much consideration,—the secret correspondence, namely, in cipher, of the papal nuncio at Paris, with the cardinal secretary at Rome,—that, so far from being cognizant of what was premeditated, the latter actually wrote to require information from his agent at the court of France, concerning the causes, authors, and circumstances of the massacre, after its occurrence; to which the nuncio Salviati's answer seems to give satisfactory proof, that the atrocity was only planned on the night previous to its execution, subsequent to the failure of the attempt to assassinate Coligni, to whose death, according to his account, the original design was limited. As his letters were written privately for the instruction of his own court, and in cipher, without any expectation, or probability, of their being made public, and as he repeatedly asserts his certain conviction of the accuracy of his information, they must be taken into account in judging the event. If true, they relieve the French court, and especially Charles IX., of the deeply premeditated infamy, charged against them, of having devised the marriage of the beautiful but infamous Marguerite de Valois with Henry of Navarre, for the set purpose of collecting all the lead-

ers and gentry of the Huguenot party in Paris, with no other object than exterminating them at one blow, while plunged unsuspecting in the festivities of that joyous occasion. This marriage took place on Aug. 18, 1572, and 4 days afterward, on the 22d, an arquebuse shot was fired at the admiral Coligni, from a window, by an assassin, employed by Catharine, named De Maurevel, who was afterward known by the sobriquet of *Le tueur du roi*, the king's killer. According to credible authority, this crime was intended to be the extent of the attack on the Huguenot party, at that moment; and was devised by the queen mother, on account of her jealousy of the vast influence acquired by the admiral over the weak and vacillating Charles, which was so great that the king called him his father, and that he had become in reality the most important personage in all the kingdom. The shot, though it took effect, was not mortal; and, as the Huguenot leaders were wrought to a desperate height of indignation, utterly refusing to believe that the assassin had been set on by the duke of Alva, without the privy of the court, and using violent threats against the intended murderers, Catharine herself became seriously alarmed, and probably not without some shadow of reason, in the expectation of a sudden insurrection of the Protestants, of whom all the principal gentry with their armed retainers were assembled at the capital, and contrived to communicate her apprehensions to the king, to the extent of making him believe that the admiral had designs on his life. The king visited Coligni at his lodging, the day after the attempt on his life, to which it is now nearly certain that he was not consenting, and swore, probably with a sincere intention, at the time, of doing so, that he would punish the author of the villany. But, on the same day, the queen persuaded him that the admiral and all the Huguenots were in a league to murder him, and, not without much difficulty, extorted from the king, on the morning of Aug. 24, the fatal order for a general massacre, on that night, to be preceded by the assassination of Coligni, in his lodging, which was to be announced by the tolling of the bell of St. Germain l'Auxerrois, whereon, as at a signal, the general slaughter was to commence. The execution of the plan was assigned to the duke of Guise and the Italian guards of the palace, supported by the assembled companies of the burghers, who were under orders to meet at the first stroke of the bell, wearing white crosses in their sallets and white napkins on their arms, in order to distinguish them from their victims. The city gates were shut and guarded, and all the Catholic inhabitants were ordered to illuminate their houses, both as a distinguishing mark, and as a means of giving sufficient light, by which to carry on the work of destruction. Orders were also despatched to the royal governors of the principal cities of all the provinces,

to commence the same massacre at the same hour; and, although, in some instances, the humanity of the officers led them to disobey their orders, the instructions were too generally followed. Coligni was run through the body, in spite of the resistance of some of his household, and thrown out of the window at the feet of the duke of Guise, who sat on horseback, coolly awaiting the performance of the dreadful deed, and when the bloody corpse was flung before his charger's hoofs on the pavement, dismounted and wiped the clotted gore from the victim's features with his handkerchief, in order to assure himself that there had been no mistake; when the fatal tocsin rang from the church of St. Germain, and the horrid slaughter began on the instant, and was deliberately prosecuted during several days, both in the capital and the large provincial towns. The king was, at first, exceedingly reluctant to give the fatal orders, which have blackened his name with everlasting infamy; and, during the whole day preceding the massacre, was nervous, irritable, and undecided. It is even asserted, that, at the last moment, he sent orders to countermand the slaughter to Guise, who, receiving them just as he was mounting his horse, replied only by the words, "*Il est trop tard!*" and rode off at the head of his assassins, as if to a field of honorable warfare. Charles was in the tennis court, with his brother Anjou, afterward Henry III., and his mother, when the bells tolled and shots were heard in the street; and he was at first overwhelmed with fear and horror, but, speedily recovering himself, he ran to the windows to inspect the scenes of havoc, and, soon, it has been said, maddened into fury by the sight of the blood, began to fire from the windows of the Louvre, which commanded the river Seine, across which a few wretched fugitives were attempting to escape by swimming, and exultingly triumphed in his skill as a marksman, as each shot told upon the persons of his subjects. But this rests only on the authority of Brantôme, who was not in Paris at the time, and reports it only as a hearsay. De Thou makes no mention of it. During the frightful scenes which followed, all sorts of horrors and disorders naturally occurred. Neither sex nor age was spared; nor was the slaughter confined to religionists only; for, in such a time of license, bad men availed themselves of it to gratify their private vengeance and resentments, and individual hatred or lust of gain had as many victims as public animosity or fanatical zeal. Creditors were murdered by their debtors; masters by their servants; fathers, it is said, by their sons, anxious to inherit before the natural appointed end. Even children are reported to have been slaughtered by other children, in their cradles; and women avenged the loss of lovers, or resented superior beauty and attractions, by the murder of women. Condé and Henry of Navarre escaped death by attending the mass and affecting to become Catholics. The crime,

however, as such crimes ever do, failed of its end. The Huguenots, far from being exterminated, were wrought to such rage by the persecution, and were so much encouraged by the general indignation and general sympathy displayed in all Protestant countries, especially in England, Holland, and the reformed states of Germany, that they increased in numbers and in strength, by the very circumstance designed for their annihilation. The court of France gained nothing by the hideous deed but infamy; and Charles, haunted forever by the ghosts summoned up by his tortured conscience, lived a short life of misery, and died a death of horror—sweating blood from every pore, the effect, probably, of poison, administered by his own brother, or, perhaps, his mother, but ascribed by the superstitious Huguenots to the direct retribution of God. Cantu relates on the authority of Pierre l'Estoile, that during his last illness he cried out to his nurse: "*Ah! nourrice, ma mie, ma bonne! que du sang, que d'assassinate!*" *Oh! quels mauvais conseils j'ai suivis!* *Oh Seigneur Dieu, pardonnez moi, et faites moi miséricorde!*" "*Ah! nurse, my good nurse! what blood; what murders! Oh! what bad counsels I followed! Lord God, pardon me! have mercy on me!*" As great as were the rage and horror which pervaded all Protestant Europe at the tidings—Elizabeth of England put her court into mourning, and turned her back in the face of the Spanish ambassador—notwithstanding the terrible excitement of men's minds at this time, it is nevertheless certain that numbers of eminent men in the Catholic party in France detested this bloody *coup d'état* as it deserved. The magistrate L'Hospital, who was attacked in his house on account of his known hostility to violent measures, and who was rescued by some cavaliers sent by the king, when the latter ordered him into his presence, and informed him that he was pardoned, exclaimed, "I was not aware that I had deserved death, or that I needed pardon." He died some days after, full of grief at the calamities he could not hinder, exclaiming: *Eccidat dies illa owo!* Henri de Savoie, governor of Provence, the viscount d'Orthez, governor of Bayonne, and St. Hérain, governor of Auvergne, refused to obey the orders of the king. The bishop of Lisieux extended an open protection to all the Huguenots of his diocese, and received all who chose to come into his episcopal palace, a line of conduct which induced the greater number to return to the Catholic church. Even during the massacre at Paris, it appears, from the testimony of the Huguenot La Popelinière, that the dukes of Aumale, Biron, and Bellièvre, with some other Catholic noblemen, exerted themselves to save as many Huguenots as possible, and that many Italians, who were among the bands of armed and mounted men that traversed the city, opened their houses as an asylum for the fugitives. In the city of Nîmes, where the Catholics had been twice assailed by the

Huguenots, as lately as 1567 and 1569, there was no rising whatever. Catholics maintain that not one of the French bishops or clergy had any share in the massacre, and that the motives which prompted it were purely political and not religious. There were rejoicings and felicitations at Rome, and a *Te Deum* sung by order of Pope Gregory XIII.; but the only information which was received at the Roman court, came through the French cardinal of Lorraine from Catharine de' Medici, and represented the king as having narrowly escaped from an insurrection against his throne and life on the part of the Huguenots. A desperate struggle for ascendancy had been going on for many years in France between the Catholics and the Huguenots, although the latter numbered only the one-hundredth part of the population, in which all Catholic Europe took the deepest interest. The great victory of Lepanto over the Turks was just being celebrated at Rome, and the news arrived there also of the accession of two powerful princes, the king of Navarre and the prince of Condé, to the Catholic side. In the midst of all these rejoicings, the French court sends its own version of the events of the 24th of August, and represents the assassination of the Huguenots as the necessary and legal punishment of a few conspirators engaged in a dark and dangerous plot against the king. In this point of view it was quite natural that the Roman court should rejoice in the defeat of the Huguenot scheme; and if afterward, when the facts were better known, they were not regarded with the horror they deserved by Catholic Europe, this is to be attributed to the violent commotions and excitements with which society and the minds of men were agitated. Since the passions of that time have given place to calm and deliberate judgment, all are agreed in condemning this desperate measure of the French court as a heinous political crime, the principal guilt of which must be laid at the door of that able but wicked princess, Catharine de' Medici, who lived only for her own personal ambition, and who would have been equally ready to excite the religious animosity of the Huguenots against the Catholics, as she was to stir up the vengeance of the latter against the former, if it had answered her purposes better to do so. The number of persons slain throughout France has been variously estimated at from 100,000 to less than 2,000. De Thou gives the number as 80,000, La Popelinière as 20,000, and Papire Masson as 10,000. The Calvinistic author of the *Martyrology of the Huguenots*, printed in 1582, estimates the number at first at 80,000; afterward, in a more detailed estimate, he brings it down to 15,168. Finally, after examining all the registers of individuals who perished, he can only find the names of 786 throughout all France. The Catholic historian, Lingard, estimates the probable number at 1,500.

BARTIZAN, in Norman castellated architecture, a projecting balcony, to which access was had from the interior, by a small postern. It

was generally placed to command some assailable point, with the fire of its shafts and cross-bar bolts; and, after the introduction of gunpowder and wall-pieces, was provided with a platform to support a saker, falconet, or some such small piece of artillery. It had, always, perforated battlements for the defence of the archers and cross-bow men, through which they could shoot at their ease, with deliberate aim; and was furnished with machicolations, or arched tunnels, opening downward, through which scalding or burning liquids, and sometimes Greek fire could be rained down, from caldrons and furnaces built into the masonry for the purpose, on the heads of the assailants, in case of their forcing the outworks and making good their position at the foot of the main walls, within the line of the cross-fire.—These bartizans were always so placed as to be themselves easily commanded in case of an enemy making himself master of one by escalade. They add much to the beauty and lightness of the castle architecture, by the aerial character of their perforated defences, their lofty position, and the graceful flying buttresses which sometimes support them.

BARTLEMAN, JAMES, English base singer, born in Westminster, Sept. 19, 1769, died April 15, 1821. At an early age, he was received into the abbey choir of Westminster, under the mastership of the celebrated Dr. Cooke. His voice, while it remained a soprano, was low, approaching to the contralto, but distinguished by fulness, strength, and rotundity of tone. In 1788, his name first appeared among the base chorus at the concerts of ancient music. In the course of one season, he revived "Let the dreadful engines," "Thy genius, lo!" "Ye twice ten hundred Deities," and "Hark, my Daridcar," of Purcell, and continued to sing them with unabated applause until he sang no more. It was not alone by the superior compass of his voice that he soared above his predecessors and competitors—his singing was eminently dramatic, intellectual, and passionate. He was buried in the cloister of Westminster abbey, where his grave is marked by a modest inscription, prefaced by the first notes of Pergolesi's air, "O Lord! have mercy upon me."

BARTLETT, ELISHA, an American physician and author, was born in Smithfield, R. I., in 1805, and died in the house where he was born, July 18, 1855. Without a collegiate education he graduated from the medical department of Brown university in 1826, spent a year in Europe, and commenced practice in Lowell, Mass. Becoming favorably known to the medical profession, he delivered the course of lectures on pathological anatomy at the Berkshire medical institute in Pittsfield, Mass., in 1832. In 1836 or 1837 he was elected the first mayor of Lowell; in 1839 he delivered medical lectures at Dartmouth college; in 1841 he took charge of the medical department of the Transylvania university, Lexington, Ky.; in 1844 took the chair of theory and practice in the university of Mary-

land, but withdrew from it at the end of the year again to visit Europe. On his return in 1846 he resumed his situation at Lexington; thence in 1849 went to Louisville, to occupy the chair of theory and practice at that place. In 1850 he removed to New York to a professorship in the university there; and in 1851 took that of materia medica and medical jurisprudence in the college of physicians and surgeons in New York, which place he held until his death.—While occupied in these different situations during the autumn and winter, he also delivered from 1843 to 1852 the lectures at the Vermont medical college, Woodstock, in the spring and summer. He disseminated in this manner a vast amount of medical knowledge, which he knew how to make attractive by his own interest in the subject, and his captivating style of instruction. But he has also laid the foundation for a more permanent reputation by a series of medical treatises in various departments of the science, published from 1842 to 1852, which have been extensively read. He also published a volume of poems, entitled "Simple Settings in Verse for Portraits and Pictures from Mr. Dickens's Gallery," 1855.

BARTLETT, ISHABOD, a distinguished lawyer of Portsmouth, New Hampshire, born in Salisbury, in 1786, died Oct. 19, 1853. He graduated at Dartmouth college, in 1808, commenced the practice of the law in Durham, but soon removed to Portsmouth, where his skill and ability soon commanded success. He is celebrated as an opponent of Webster and Mason. He was frequently a member of the state legislature, and was elected to the U. S. house of representatives for 8 terms, from 1823 to 1829.

BARTLETT, JOHN R., secretary of state in Rhode Island, born at Providence, Oct. 23, 1805, was early placed in a banking-house, and was for 6 years cashier of the Globe bank at Providence. While there he was one of the original projectors of the Providence atheneum, and an active member of the Franklin society, before which he occasionally lectured. In 1837 he engaged in business in a commission house in New York, in which he was unsuccessful. He then established a bookstore there for the importation and sale of English and foreign works, which soon became the resort of literary men. He became at this time one of the active managers of the New York historical society, and a projector of the American ethnological society.—In 1850 he was appointed by President Taylor commissioner to fix the boundary line between the United States and Mexico under the treaty of Guadalupe Hidalgo. He remained in this service until Jan. 7, 1853, making extensive surveys and explorations with elaborate scientific observations, but, for want of the necessary appropriations, the boundary line was not completed by him. He published, in 1854, a personal narrative of explorations and incidents in the countries which he had visited—having previously published, in 1847, a small work on the progress of ethnology, and the

next year a dictionary of Americanisms. He became secretary of state of Rhode Island, May 1, 1855, and has held that office for nearly 3 years.

BARTLETT, JOHN SHERRIN, M.D., an Anglo-American journalist, founder of the "Albion" newspaper in New York, born in 1790, in Dorsetshire, England, was educated as a physician in London; on the recommendation of Sir Astley Cooper, was appointed surgeon in the royal navy in 1812; sailed to the West Indies on board the packet Swallow; was captured by the American frigates President and Congress, under Commodore Rodgers, and remained a prisoner at Boston until discharged in 1814. At the close of the war he married a lady of Boston, and established himself there as a physician. The "Albion" was commenced by him in New York, June 22, 1822, as an English organ of conservative politics. Through its interesting variety of miscellaneous reading, this journal gained a wide and profitable circulation. Dr. Bartlett subsequently commenced one or two other papers of a similar character at a cheaper price, and on the beginning of Atlantic steam navigation, also established at Liverpool the "European," a weekly compendium of the latest news for American circulation. Owing to the failure of his health, Dr. Bartlett withdrew from the "Albion" in 1848. He resumed journalism again in Dec. 1855, by issuing the "Anglo-Saxon," a weekly paper at Boston, which he continued about 2 years. In 1857 he served as British consul at Baltimore. In 1858 he resides in New York.

BARTLETT, JOSEPH, wit, poet, and adventurer, born at Plymouth, Mass., of a good Puritan family, about 1763, died at Boston, Oct. 27, 1827. He graduated at Harvard college in 1782, and began the study of law at Salem, but soon gave it up for a voyage to England. At London, being at the representation of one of General Burgoyne's plays in ridicule of his countrymen, he stood up in the pit and cried out, "Hurra! Great Britain beaten by barbers, tailors, and tinkers!"—with prodigious effect. It was taken in good part and got him the acquaintance of many of the "bloods" of the day. Here he pursued the career of an adventurer, gambled, spent, got into prison, wrote a play for his release, and went upon the stage himself. From an actor he became a merchant, and being sailed for America with a large supply of goods on credit, was shipwrecked on Cape Cod. As he had freely avowed infidel opinions on a voyage, and showed a cowardly anxiety when the vessel struck, he carried it off by saying "he was not so much afraid to die, but he could not bear to be found dead in such a desolate place as the back of Cape Cod." Failing again in a mercantile connection at Boston, he was more turned to the law. For a while he figured as captain of volunteers in Shay's war, then opened an office in Woburn, painting it black and calling it the "Coffin," to attract notoriety. He next removed to Cambridge, making him-

busy with the affairs of the town and of the college. In 1799 he delivered a poem on physiognomy before the Phi Beta Kappa society, satirical and clever, and said to touch upon the traits of individuals at the time. To the edition of this poem, published in 1823, were appended a number of "Aphorisms on Men, Principles, and Things," the results of his various experience. The same year he delivered a Fourth of July oration at Boston, and afterward recited a poem, entitled the "New Vicar of Bray," which obtained considerable celebrity. He next attempted the practice of law and of politics in the state of Maine, was elected to the state legislature, and nearly secured an election to Congress by his active exertions as a speaker and newspaper writer. He then practised law at Portsmouth, N. H., and finally closed his improvident life, a burden to his friends, at Boston. (See Duyckinck's "Cyclopædia of American Literature.")

BARTLETT, JOSIAH, M. D., governor of New Hampshire, born in Amesbury, Mass., in Nov. 1729, died May 19, 1795. He commenced the practice of medicine in 1750, at Kingston, and established a reputation, during the prevalence of the *angina maligna* in 1754, by treatment with Peruvian bark, in opposition to the usage of other physicians. He received several appointments from the royal governor John Wentworth, but was deprived of them in 1775, for being a zealous whig. In 1774 he was appointed to the command of a regiment of militia. Being chosen delegate to the continental congress, he was the first who voted for, and the first, after the president, who signed the declaration of independence, his name being first called as representative of the most easterly province. He accompanied Stark in 1777 to Bennington. He was appointed chief justice of the common pleas in 1779, justice of the supreme court in 1784, and chief justice in 1788. He was an active member of the convention called to adopt the federal constitution in 1788. In 1790 he was president of New Hampshire, and in 1798, was chosen the first governor under the new state constitution. He was also president of the medical society established in 1791, by his exertions. In all his various offices his duties were ably and faithfully discharged.

BARTLETT, JOSIAH, physician, born in Charlestown, Mass., in 1759, died March 5, 1820. He studied medicine in the military hospital in 1775, and served as surgeon's mate till 1780, and afterward went 2 voyages as surgeon to ships of war. He then settled at Charlestown, where he had an extensive practice, and was representative, senator, and councillor. He delivered many orations, medical, political, and literary, and published various papers in the transactions of the medical society, and in the "N. E. Medical Journal."

BARTLETT, WILLIAM, one of the founders and the principal benefactor of the theological seminary at Andover, Mass., born at Newburyport, Jan. 31, 1748, died in the same town, Feb. 8,

1841, having resided there throughout the whole of his long life. His minority was passed in a humble occupation, but before the revolutionary war he had entered upon a career of mercantile enterprise, and at its close, with the revival of commerce he was in a situation to take advantage of the favorable opportunities of the times. The deficiencies of his education were supplied by shrewdness and caution, and his success procured general confidence at home and abroad. While his business was constantly increasing, his personal and family expenditures were on the most economical scale, so that his wealth became very great. He loved to employ it as steward for the needy and in the cause of religion and morals. Besides liberal contributions in aid of the temperance reformation, the foreign missionary enterprise, and the education of young men for the ministry, he gave \$30,000 toward the foundation of the Andover theological seminary, endowed a professorship, and built a house for the incumbent, watched over the institution through life, and did every thing that money could do to further its objects.

BARTLETT, WILLIAM HENRY, English artist and author, born in Kentish-Town, Middlesex, March 26, 1809, died at sea, between Malta and Marseilles, Sept. 13, 1854. He was apprenticed in 1828 to John Britton, the antiquary, for whom he made many sketches and drawings from nature, and from the different English cathedrals and cities. He acquired great skill and facility as a draughtsman, and journeyed not only over England, Scotland, Ireland, and Wales, but over the greater part of Europe, and also explored the East in 1834-'35, again in 1842-'45, the third time in 1853-'54. He visited America in the years 1836-'37-'38, and in 1841 and 1852. Nineteen large 4to volumes, containing about 1,000 plates, engraved from his drawings, were published, describing many of his voyages and travels. The letter-press of these was supplied by Dr. W. Beattie, the biographer of Thomas Campbell, and by Mr. Nathaniel P. Willis, who wrote the portion relating to America. Mr. Bartlett was, however, himself the author as well as the artist of "Walks about Jerusalem," 1844; "Topography of Jerusalem," 1845; "Forty Days in the Desert," 1848; "The Nile Boat," 1849; "The Overland Route," 1850; "Footsteps of Our Lord," 1851; "Pictures from Sicily," 1852; "The Pilgrim Fathers," 1853; and "Scripture Sites and Scenes," &c., 1855—the last published after his death, which occurred on the Mediterranean, on his return to England. He was a literal and faithful, rather than an imaginative and fanciful artist.

BARTOL, CYRUS AUGUSTUS, an American author and Congregational clergyman, born at Freeport, Me., April 30, 1818, graduated at Bowdoin college, 1832, completed his theological education at the Cambridge divinity school, 1835, and settled as colleague pastor with the Rev. Charles Lowell, D. D. of the West church in Boston, March 1, 1837. His principal

writings are "Pictures of Europe," a work combining a series of graphic sketches of European travel with philosophical reflections, "Discourses on the Christian Spirit and Life," "Discourses on the Christian Body and Form," and a history of the "West Church and its Ministers." His latest production is a work on ecclesiastical polity, treating of the relation between church and congregation. He has also published a variety of occasional and miscellaneous discourses and essays, beside numerous contributions to the leading periodicals of the day, and several poetical compositions. His writings are characterized by a remarkable individuality of thought and illustration, and a certain antique quaintness of style. Although of a deeply religious tone, they give more prominence to the ethical and social element than to theological doctrine.

BARTOLI, DANIELE, a learned Italian Jesuit, born at Ferrara, Feb. 12, 1608, died at Rome, Jan. 18, 1685, the author of a celebrated history of the order of the Jesuits, published at Rome in 6 vols. in 1658-'75. Bartoli had access to many curious manuscripts in the Vatican, of which he availed himself. This gives to his work peculiar interest, and portions of it, as for instance that on Asia, passed through several editions. The first edition of 1667 contains also an interesting account of the mission to Mongolia, and a sketch of the life of Father Acquaviva. He also wrote on physics and philology. A new edition of his complete works in 12 vols. appeared at Turin in 1825, and a select edition of the most striking passages at Milan in 1826.—**PIETRO SANTES**, sometimes called Perugio, an Italian painter and engraver, born about 1635, died at Rome in 1700. He was a pupil of Nicolas Poussin. His engravings, numbering over 1,000, are scarce and valuable. His skill as a copyist was so great that he could counterfeit the effects of time on the colors of pictures.

BARTOLINI, LORENZO, an Italian sculptor, was born at or near Florence about 1778, and died Jan. 20, 1850. He received instruction in his youth from Desmarests, a French painter in Florence, but afterward deserted the pencil for the chisel under the sculptor Lemot. He received the 2d prize for a bass-relief, "Cleobis and Biton." No artist of the day was believed to have attained to such purity of conception and execution. He received orders from Denon and Napoleon, many of which he was obliged to leave unfinished. He also founded a school at Carrara. His principal works were, a colossal bust of Napoleon, busts of Cherubini, Mehul and others, a statue of the emperor, and the groups of "Charity" and "Hercules and Lycas." He also executed a monument to Lady Stratford Canning, which has been particularly praised for the beauty of its design—it is placed in the cathedral of Lausanne. Bartolini sent to the French exhibition many beautiful works. The bust of Rossini, and statues of "Arnica, Nymph of the Arno," and the

"Nymph and the Scorpion," are some of his later productions.

BARTOLOMEO, FRANCESCO, a celebrated painter, born at Savignano, near Florence, in 1469, died in 1517. He painted both portraits and historical subjects, but rarely depicted the human form in a nude state, from scruples of conscience. Raphael, after quitting the school of Perugino, studied the rules of perspective under his direction, with the art of coloring.

BARTOLOZZI, FRANCESCO, an engraver of merit, was born at Florence, in 1730, died at Lisbon, in 1815. His most celebrated work is the death of Lord Chatham, a good copy of which was originally sold for \$112. His various productions amounted to more than 2,000.

BARTON-UPON-HUMBER, a market town of England, on the Humber, which is here 6 miles wide. The town consists mainly of 2 spacious streets, contains a large and ancient church, and has some trade in corn and flour, beside several manufactories. In the vicinity are the remains of Thornton abbey, founded in 1139.

BARTON-UPON-IRWELL, a township of England, county of Lancaster, on the Liverpool and Manchester railway. The first aqueduct bridge across a navigable river, ever constructed in England, is at this place. It carries the Bridgewater canal over the Irwell, and consists of 3 arches, raised 40 feet above the river.

BARTON, BENJAMIN SMITH, an American naturalist, born at Lancaster, Penn., Feb. 18, 1766, died Dec. 19, 1815. He was one of the first professors of natural history in the United States, and published the first American elementary work on botany. After the death of his parents he went, in 1782, to Philadelphia, where he studied diligently for some years, devoting himself especially to medical science. In 1786 he went to Europe, studied medicine at Edinburgh and London, and obtained a degree at Göttingen. He returned to Philadelphia in 1789, established himself as a physician in that city, and soon obtained a good practice. In the same year he was appointed to the chair of natural history and botany in the college of Philadelphia, and continued to hold this chair after the college was incorporated with the university in 1791. In 1795 he was appointed professor of materia medica in the university of Pennsylvania, and, on the death of Dr. Ross, succeeded that eminent physician as professor of the theory and practice of medicine in the same institution, which office he held until the time of his death. He was president of the Philadelphia medical society, and member of many other learned societies, both at home and abroad. During the last years of his life his health was not good, and he made a visit to Europe, in the hope of improving it, but without avail. His works are mostly on subjects connected with natural history, especially botany. Among them are "Elements of Zoology and Botany," "Vegetable Materia

Medica of the United States," and a work entitled "Flora of North America."

BARTON, BERNARD, commonly called "the Quaker poet," born near London, Jan. 31, 1784, died at Woodbridge, in Suffolk, Feb. 19, 1849. In 1810 he became a clerk in a bank at Woodbridge, where he officiated almost to the day of his death. In 1812 he commenced authorship, with "Metrical Effusions." In 1820 another volume of "Poems" appeared, but his reputation was principally established by some lyrics which he contributed, from 1821 to 1824, to the "London Magazine," then in its prime. His "Napoleon and other Poems" appeared in 1822; "Poetic Vigils," in 1824; "Devotional Verses," in 1828; and a great number of pieces in the annuals and magazines. No doubt the fact of his being a member of the society of Friends first excited public interest in his favor; but his poetry, though deficient in force, was earnest, as well as graceful, with a pure religious tone. During the ministry of Sir Robert Peel, he was placed on the pension list for £100 a year for life. He died suddenly of a heart affection. After his death his daughter collected his fugitive poems, which she prefaced with a well-written biography.

BARTON, ELIZABETH, called the holy maid of Kent, celebrated as a religious visionary employed by the adherents of Queen Catharine to excite the English people against the divorce of Henry VIII. from that princess. Richard Massers, vicar of Aldington, and Bocking, a canon of Canterbury, spread abroad the belief that in certain paroxysms of delirium, to which she was subject, she was inspired by God. Her retentions were countenanced for a time even by such men as Sir Thomas More and Bishop Fisher. At the instigation of Bocking she became a nun, and led a life of such apparent devotion as to give color to her professions of intercourse with angels and the Virgin Mary. During her convulsions she often denounced the proposed divorce of the king and queen, and prophesied that if it were persisted in, Henry would not wear his crown 7 months. These revelations produced such excitement among the people, that she and her accomplices were ordered before the star chamber, and, after a full confession of the conspiracy, were condemned by that tribunal to make a public cantation. But the partisans of the queen labored to induce them to retract their confession, they were found guilty of high treason, and executed at Tyburn in 1534.

BARTON, THOMAS, an Episcopal clergyman, born in Ireland about 1730, died at New York, May 25, 1780. He graduated at the university of Dublin, and in 1758 married, at Philadelphia, a sister of Rittenhouse, the celebrated mathematician. In 1764 he was ordained in England, and in the following year came to America as a missionary. He accompanied, as chaplain, the unfortunate expedition to Fort Mifflin, in 1755, which resulted in the disastrous defeat of Braddock. For many years

he was rector at Lancaster, Penn., but, in 1778, was obliged to leave that place on account of his adherence to the royalist party. He then removed to New York, where he died not long after. One of his children was Benjamin Smith Barton, the naturalist.

BARTON, WILLIAM, a lieutenant-colonel of the American army during the revolution, born about 1747, died at Providence, R. I., in Oct. 1831. He was distinguished especially for his exploit in capturing Major-general Prescott near Newport, in July, 1777. Barton marched, by night, with a body of men to the house where Prescott was sleeping, and, with the assistance of a negro, who broke in a panel of the door with his head, made his way into the chamber of the British officer, and took him prisoner. For this exploit he received from congress the gift of a sword, and a tract of land in Vermont. In consequence of some illegality in the transfer of a portion of this land, Barton was involved in difficulties, and thrown into prison, where he remained several years, until he was released, in 1825, by the aid of Lafayette.

BARTRAM, JOHN, an American botanist, born at Marple, Chester co., Penn., in 1701, died in Sept. 1777. His grandfather was one of the companions of William Penn. He himself supported a large family by his industry as a farmer; but, by unremitting application, he mastered the rudiments of the learned languages, and made such proficiency in botany that he was pronounced by Linnaeus the greatest natural botanist in the world. He made excursions through many regions of North America at a time when they were covered with forests, and he was the first to describe particularly their natural productions. Thus, in 1743, he visited the shores of Lake Ontario, and, in 1765, he explored the region of the river St. John's in Florida, and in both of these excursions he collected many beautiful plants and trees, which he sent to enrich the gardens of Europe. He was supplied by Linnaeus, Sir Hans Sloane, and others, with books and apparatus, and he, in return, sent them specimens of new and curious American plants. He founded on the bank of the Schuylkill, a few miles below Philadelphia, the first botanic garden in America, where he cultivated beautiful and rare American, as well as exotic, plants. At the time of his death he was a fellow of several foreign learned societies, and bore the title of American botanist to George III. of England. He published an account of his observations during his American travels, and contributed to the British philosophical transactions several papers on scientific subjects.

BARTRAM, WILLIAM, son of the preceding, a naturalist, botanist, antiquary, and traveller, born in 1739, at the botanic garden, Kingessing, Penn., died July 22, 1823. He commenced life as a merchant; but accompanied his father in a journey into East Florida to explore the natural productions of that country, and there settled on the banks of the river St. John's. In 1771 he returned to Kingessing, but soon after,

in 1778, at the request of Dr. Fothergill of London he made a second scientific journey to Florida, taking in parts of Carolina and Georgia. The narrative of his expedition, under the title of "Travels through North and South Carolina, East and West Florida, &c.," was published in Philadelphia in 1791, and in London in 1792, and at once became popular. Another production of his pen, written in 1789, was published as late as 1858, in the 8d vol. of the transactions of the American ethnological society, under the title of "Observations on the Creek and Cherokee Indians." In 1782 Bartram was elected professor of botany in the university of Pennsylvania, but declined on account of a serious affection of his eyes. He made known and illustrated many of the most curious and beautiful plants of North America, and published the fullest list of American birds previous to Wilson, whom he greatly assisted at the outset of his labors.

BARTSCH, ADAM VON, engraver and author, born at Vienna, Aug. 17, 1757, died there, Aug. 21, 1821. At the age of 16 he brought himself into the notice of the Austrian government by a series of engravings of the gold and silver medals issued during the reign of Maria Theresa, and, in 1781, was appointed keeper of the prints of the royal collection. In 1808 he produced the first volume of his well-known work, *Le Peintre-Graveur*, in 21 vols., giving a description of the principal engravers of Europe, and criticisms on their works. He etched upward of 500 pieces, and published several catalogues of works of art.

BARUCH (Heb., blessed), the friend and amanuensis of the prophet Jeremiah. He was the son of Neriah. When Jeremiah purchased the field of Hanameel as a token of the return of the people from captivity, Baruch was made both witness and depository of the deed of conveyance. He wrote and read to the people from a window of the temple (605 B. C.), by command of King Jehoiakim, all the prophecies of Jeremiah then delivered, and gave an account to the king of the manner in which they had been delivered. The king destroyed the roll, cutting it with a knife and afterward burning it. Baruch wrote another from the re-dictation of Jeremiah. Baruch is also supposed by some to have been the author of the apocryphal book of that name. In the Septuagint it follows next after the prophecy of Jeremiah. The council of Laodicea speaks of it as deuterocanonical, and Cyril of Jerusalem and Athanasius mention it as canonical. If Baruch was the author of the book, it was written in Hebrew, and this its Hebraisms seem to indicate; and he must have returned from Egypt after the death of Jeremiah, whom he had followed there. Of such return there is no account.

BARUS, a small Malay town on Burumon river, in the Batak territory, on the western coast of Sumatra. Frequent mention of it is made by De Barros and Barbosa in accounts of the first

intercourse of the Portuguese with Sumatra, as a place of some importance, but it is only noted at present for giving a name to the species of camphor so highly prized by the Chinese, called *kapur Barus*. Pop. 1,500.

BARYTA, BARYTES (Gr. *Barys*, heavy), so named from the great weight of the natural compound of barytes and sulphuric acid, known as heavy-spar. Barytes is the oxide of the metal barium. It is not found in nature, but is obtained from the sulphate above named, and from the mineral witherite, which is the carbonate of barytes. It is only prepared for uses in chemical analysis. Barytes is a grayish white substance of earthy appearance, of a sharp, caustic taste, corrodes the tongue and skin, is very poisonous, and has strong alkaline reaction. Its specific gravity is 4.0. It has a strong affinity for water, and acts like quicklime, rapidly absorbing it, giving out light and heat, and slacking into a fine white powder, which is the hydrate. In this state it is fusible, but will not at any temperature part with all its water; anhydrous barytes is infusible. It has a stronger affinity for sulphuric acid than any other of the bases has, and will, consequently, decompose the sulphates in solution. In the form of the nitrate and muriate it is of great use in chemical analysis.—Sulphate of barytes is the well-known mineral heavy-spar, consisting of sulphuric acid 84.88 and barytes 65.67 per cent., and frequently found as a gangue in mineral veins. Its principal use is to adulterate white lead.—Carbonate of barytes is found in Cumberland, England. It consists of carbonic acid 22.33, barytes 77.67. Its value is for preparing the other salts of barytes, and it is also used in England as a rat poison.

BAS, or BARZ, a small island belonging to France, lying in the English channel, on the northern coast of the department of Finistère. The island is between 2 and 3 miles long, and not quite 2 miles wide. It is destitute of trees, and contains 3 villages, 4 batteries, and 2 forts. A light-house stands on this island, showing a revolving light, and the channel between the island and the mainland affords a tolerable shelter for ships.

BASALT, a variety of trap-rock of similar origin to the lavas, into which it passes. It consists of felspar and augite, which are sometimes in distinct crystals, but it is usually of compact structure, and of a dark gray, or green, or black color. Oxide of iron is frequently so disseminated through it as to affect and greatly disturb the surveyor's compass. It often takes the form of columns, as in the palisades of the Hudson river, the Giant's causeway, &c. These are the effect, not of crystallization, but of the tendency of compound melted bodies, when cooling, to take the prismatic form, the prisms extending at right angles to the cooling surface. They vary greatly in size, as well as in the number of their sides; sometimes the columns are articulated, the convex end of one joint fitting in a corresponding depression of

the next. On the island of St. Helena is a famous natural columnar basaltic structure called the chimney, which is more than 60 feet high, and is formed of horizontal six-sided prisms, with angles somewhat rounded. They appear like so many logs of wood piled up.

BASCHI, MATTEO, a Franciscan friar, and the first general of the religious order of Capuchins, born in the former duchy of Urbino, toward the end of the 15th century, died at Venice in 1552. He was an inmate of the convent of Montefalcone, when he believed that a spirit appeared to him during his sleep, dressed in a strange, peculiar garb, urging him to adopt a similar style of dress. Complying with the request of his supernatural visitor, he presented himself in the new dress to Pope Clement VII., and submitted to him that the great St. Francis had always been dressed in the same manner, namely, a coarse garment without any scapulary, and a capuche, or hood, shaped like a sugar loaf. The pope afterward commanded all Franciscan friars to adopt the same costume. But Baschi had to share the fate of most reformers. He was put into prison by the anti-capuche friars, and for some time the cry in the Franciscan convents was, "Down with the Capuchins!" The excitement ran high, but eventually the capuche was triumphant, Baschi was released from prison, and the new dress generally adopted. It consisted of a large robe of flannel of a light chestnut color, tied with a girdle, and covered with a small cloak of the same material, with an immense hood, fitted to the cloak. Hence the name of Capuchin.

BASE. I. In architecture, in general, any body which bears another. It is applied particularly to the lower part of a column on which the shaft is placed. Its form varies in the different orders, and in the Greek Doric there is no base, the columns standing immediately upon the floor of the portico. II. In chemistry, a term used in 2 applications: one limited to those bodies which combine with acids to form salts, and which may be replaced by other bases; and the other, more general, designating the leading constituents of compounds. In the latter and more popular sense soda is the base of the salt, sulphate of soda, and sodium of soda, the oxide of the metal. By the more strict signification, another term has to be introduced to characterize the metallic base, and this is called the radical. The radical of the base is the basic radical, and that of the acid, as sulphur of sulphuric acid, is the acid radical. Oxygen, sulphur, selenium, and tellurium, act sometimes as acids and sometimes as bases; they are hence called amphigene bodies (both-formers). Alkalies and some other metallic oxides were formerly regarded as comprising all the strictly defined bases; but to these are now added a large class of organic substances existing in plants, which, with acids, form salts, and may be separated by the greater affinity of the acid for stronger bases. These vegetable bases or alkaloids consist of oxygen,

hydrogen, and carbon in combination with a certain proportion of nitrogen. The constant presence of this element has led to the supposition that the salifiable properties of these compounds may be attributed to it. The vegetable bases are usually in white crystals. The few animal bases or alkalies are volatile, liquid, and of oily consistency. The powerful medicinal properties of plants reside in the bases extracted from them. A crystal of aconitine contains the concentrated strength of numerous plants of the monkshood; and one of morphia combines that of a large quantity of opium; as one of quinine does the same of Peruvian bark. III. In geometry, that side of a solid or of a plane figure, on which it is imagined to stand. In other departments of mathesis a base is a number assumed as the foundation of a scheme of numbers, or of calculated tables. A base line in geodesy is a line actually measured, from which all the other distances in the survey are calculated,—the angles of the triangles alone being measured. In the U. S. coast survey, under Prof. A. D. Bache, great improvements have been made in modes of measurement, and several bases of 5 or 6 miles in length have been measured. The measurement is microscopically accurate, and made at the rate of about 500 yards per day. IV. **BASE**, or **BASS**, in music, the lowest or gravest part on which the whole superstructure of the composition rests. Hence it is considered by some the fundamental or most important part, while others regard the melody as such. When applied to the voice, it denotes the lowest species of singing voices, the usual compass of which is from G or F below the base staff to D or E above it. It is also usual to call the lowest tones of any instrument the base.—*Base clef*, the F clef placed on the 4th line of the staff.—*Continued base*, a term employed to denote a continued, uninterrupted base, and also one that is figured for the purpose of indicating the harmony connected with it, and of which it is the foundation.—*Double base*, called also the *contra basso*, the largest and deepest toned of the stringed instruments of the violin species. It formerly had three thick strings of catgut, to which musicians have added a fourth, and is played by a bow. Its deep and powerful tones render it the most important instrument in the orchestra for sustaining and enriching the harmony, but it is also capable of being used with effect as a solo instrument.—*Figured base*, a base which is furnished with figures to represent the accompanying harmony. Sometimes the term is synonymous with figurative base, which moves with more freedom than the plain, simple style known as the *canto fermo* or plain chant.—*Fundamental base*, the root or fundamental note of a chord. The term is sometimes applied to a series of notes to denote the succession which constitute the several individual fundamental notes of the respective chords. (See THOROUGH BASE.) V. In tactics, a well-guarded region or locality which serves as

a centre and starting point for military operations. In the writings of Heinrich von Bülow, the fortresses of the base are termed the subject, the point to be carried the object, and between the two lies the line of operation. Although in general troops cannot safely advance far from one base without forming a new one, yet Napoleon owed his most brilliant campaigns, and it may be added, also, his terrible failure in Russia, to an utter disregard for the theory of the base.

BASE VIOL, a musical stringed instrument, resembling the violin, but much larger. It has 4 strings and 8 stops, which are subdivided into semi-stops. The base viol is played with a bow, has a grave sound, and produces a much better effect, in concert with other instruments, than the violin.

BASEDOW, **JOHANN BERNHARD**, a German educator, born Sept. 8, 1738, in Hamburg, and died July 25, 1790, in Magdeburg. He studied in Leipsic, and was teacher in Holstein, Denmark, and Dessau, where, in 1774, he founded the academy called "Philanthropin," and published a model elementary school book, *Orbis pictus* (3 vols. Altona, 1774), which has been translated into several languages. Without sufficient perseverance in his exertions, he did more for arousing the world to ideas of school reform, than toward reforming the school himself. He was the father of what is called philanthropism—an attempt to carry into effect the ideas of Rousseau on education and the reform of society, by discarding the exclusively classical instruction in the higher schools, and the use of corporal punishment. He opposed the exclusive learning by rote and the study of abstract things (rules, dates, names), in all schools, showing that instruction must be made attractive, intuitive, addressing itself to the imagination, the sight, the hearing, the feeling, and that the pupil is not to be considered as a kind of animal that may be forced and moulded into any form. He advocated new methods that would facilitate learning and interest the pupils in self-activity, self-thinking, and self-instruction, by introducing new branches of useful knowledge, natural history, technology, the description of foreign nations, customs, manners, animals, and plants, drawing and modelling, &c., into all elementary instruction, and in short, by leading back to the natural way of education, which teaches youth what they can bear and digest, in the simplest way, with the least torture of the youthful mind, and the least expense of time and means. His *Orbis pictus*, adorned with 100 of Chodowiecki's excellent engravings, which gave the most various representations from natural science and the different branches of industry, led to imitations, a great many similar illustrated works for children having since been published. This philanthropism was cosmopolitanism, of which Basedow may be said to have been the father in Germany, and which together with many other attempts at social reform in the latter half of

the 18th century, excited a very general enthusiasm among the best classes of German and French society, even among princes. Among the latter was Leopold Frederic Franz, of Dessau, who gave Basedow the means of establishing his Philanthropin, and contributed toward the publication of the *Orbis pictus*. B.'s influence was thus very great, although he soon abandoned every new scheme for a similar one, and left it to more patient minds like Pestalozzi, Salmann, Guts-Muths, Zschokke, Becker, and others, to finish what he had begun. He made many mistakes, he disparaged too much the study of Greek and Latin, made instruction too much like a play, neglected to set the pupil to thinking, and was without sufficient system; but he has the merit of having drawn the attention of the better classes in Germany to the necessity of school reform, of having discarded bad school books and opened the door for better ones, and by his convincing eloquence of having interested many superior minds in the great cause of mental and human progress by the improvement of education. In short, it may safely be asserted, that he was the medium through which every thing good and genial in Rousseau's writings on education, first obtained practical existence, while at the same time he eliminated much that was one-sided and impracticable in Rousseau, whom he, of course, did not equal in genius and power of writing.

BASEL (Fr. **BASLE**, or **BÄLE**), a canton of Switzerland, divided since 1833 into 2 independent cantons, Basel city and Basel country; area about 200 sq. miles, whereof more than four-fifths are in the country canton; pop. in 1850, 77,583, of which 30,000 are inhabitants of the city and its dependencies. Basel is bounded E. by the grand duchy of Baden and the canton of Aargau, W. and S. by the cantons of Solothurn and Bern, W. and N. by the French department of Alsace. The northernmost chains of the Jura mountains descend here northwardly into the plains of the Rhine, which are about 700 feet above the level of the sea, while the highest elevations within the canton are not more than 3,800 feet. The land is for the most part hilly but fertile, the climate mild on account of the northerly winds being kept off by the mountains. The Rhine is the only river of the canton worth mentioning, but a abundance of rivulets and brooks irrigate the land. There are no lakes as in other cantons of Switzerland; the lime formation of the mountains yields no minerals with the exception of salt and coal; there are five mineral springs. The agriculture has little variety, and furnishes for export fat cattle, butter, cheese, hides, and cherry brandy. There are manufactures of cotton, iron, copper, silk, steel, which are largely imported as raw materials and exported in a highly manufactured state. Among the articles of export are silk ribbons (\$2,000,000 annually), linen, leather, and paper; the dyeing and bleaching factories are celebrated. The inhabitants, who are almost without exception

Protestants, are purely Teutonic, and speak German, though a dialect which is difficult to understand from the admixture of obsolete German and modern French words. The city of Basel was founded by the Romans and by them called *Basilia* or *Basiliana*. Destroyed in the wars between the Romans and Germans, it was rebuilt by the German emperor Henry I. (924-'83), when it became the residence of a bishop, and belonged for some time to Burgundy, but after 1032 to the German empire. The territorial dominion belonged partly to an imperial bailiff, partly to the bishop, who at the same time was bishop of Solothurn, Zug, Lucerne, Bern, Aargau, and Thurgau, partly to some noble families, and partly to the patrician families of the city. The latter gradually became sole proprietors until they joined the Swiss confederation; the nobility emigrated or were embodied among the patricians, and the bishop emigrated with his chapter to Solothurn, when after 1519 the city embraced with ardor the reformed faith. Thus the whole political sway was left with the patricians and trading corporations, who in time became omnipotent over the peasants, and reduced them and the poorer citizens to subjection, against which the latter often but in vain rebelled. The policy of the first French republic broke this yoke and gave social equality to all classes, while a contribution of 11,000,000 francs was levied upon the city. Under the French sway Basel shared the fate of the other Swiss cantons, until the restoration of 1814 brought back to the patricians part of their ancient prerogatives, and, in 1815, embodied 5 villages with 75 sq. miles, formerly the property of the bishop, in the canton. The dissatisfaction of the country on this account led to a separate organization of the latter in 1831, and to several bloody battles between the soldiery of the city and the peasants, until the Swiss confederation intervened and acknowledged the division of the canton into 2 half cantons. Since that time the constitution of the country has made rapid strides toward a perfect democracy and material improvement, and even that of the city has been reformed after modern republican ideas.—The city canton consists of Great Basel on the left bank, Little Basel, and villages on the right bank of the Rhine, which are connected by a bridge 15 feet long, both portions of the city being fortified. It has, alone of all Swiss cantons, a standing army of 200 men, sends one representative to the national council, has a well-regulated finance, with 1,500,000 Swiss francs of debt, and about as much public domain, and about half as much public expenditure annually, of which nearly one-fourth is sent for public schools. A university, founded in 1459 by Pope Pius II., with a considerable library and many valuable manuscripts, a cabinet of coins, botanic garden, and a museum of natural science, is in a languishing state, little frequented and less celebrated, although it was famous during the reformation. There are many

benevolent institutions, of which the missionary establishment and society are known all over the world; the picture gallery is rich in works of the old German school, particularly by Schongauer, Holbein, and Manuel Deutsch.—The splendid cathedral, erected in 1010-'19 by Henry II., contains the tombs of Anna, the wife of Rudolf of Hapsburg, Erasmus of Rotterdam, Ecolampadius, and Bernouilli. Basel is the birthplace not only of the family of the great mathematician Bernouilli, but also of Euler, the astronomer, and of Buxtorf, the Hebraist. A treaty of peace between the French republic and Prussia was signed at Basel, April 5, 1795, and between the former government and Spain, July 22, of the same year. The Spanish prime minister, Godoy, received the title of "Prince of the Peace," on account of this treaty. The population of the city, which was much larger in the middle ages, was in the 14th century so terribly decimated by the "death of Basel," or "black death," that it never recovered its ancient proportions.—The country canton, the youngest of all Swiss cantons, sends 2 members to the national council, and has the most liberal constitution of all. All privileges are abolished; every male inhabitant upward of 20 years of age is a voter and liable to serve in the militia; every law may be vetoed by a majority vote of all citizens. There is only one legislative body, the land council, consisting of one chamber, and selecting an administrative board of 7 members. A revision of the constitution in 1838 allowed to the election districts a participation in the choice of the administrative council, shortened the terms of almost all offices, and made the judiciary more dependent on the popular choice. The yearly expenditure is under 800,000 francs. The canton has no debts; it has a mortgage bank, established by the state in 1849, a good school, and an excellent military system. Capital, Liestal.

BASEL, COUNCIL OF, one of the œcumenical councils of the Roman Catholic church. Properly speaking, the councils of Basel, Ferrara, and Florence, constitute but one council, of which several sessions were held in each of these cities, and which is usually called the council of Florence, because the most important questions were definitively settled and the council terminated at this latter city. The council, during its sessions at Basel, until its transfer to Ferrara in 1437, was acknowledged as œcumenical by Eugenius IV., and its decrees were confirmed by him, with the exception of those which interfered with the prerogatives of the holy see. After the transfer to Ferrara, a certain number of prelates still continued to hold sessions at Basel, but from this date the council of Basel is regarded as a conciliabulum, or schismatical assembly. During its œcumenical sessions, the council of Basel made no decisions of doctrine, but only of discipline. The principal reasons for assembling a general council at the period referred to, were to effect the reconciliation of the Greek

church, and to reform ecclesiastical discipline. The council was summoned by Pope Martin V., to meet at Basel, March 8, 1431. Meanwhile he died, and Eugenius IV. was elected to succeed him, on the very day of the indiction of the council. He immediately confirmed the acts of his predecessor, convoking the council. On the day appointed, not a single bishop, and but one abbot, appeared at Basel. The last-mentioned person went through the form of declaring himself assembled in oecumenical council. Five days afterward, 4 deputies who had arrived in the meanwhile, together with the first-named abbot and a few clergymen of the city, opened the council solemnly a second time, although there was not a single bishop in their number. Some time during the ensuing September, Cardinal Julian Cesarino, the papal legate, arrived at Basel, and sent letters to different prelates, exhorting them to come to the council. On Sept. 26, he held a session, at which it is said 8 bishops and 7 abbots were present. The cardinal having sent an envoy to Rome to represent the state of things at Basel, Pope Eugenius IV., who desired to convoke the council in a place more convenient to the Greeks, sent a bull to his legate, empowering him to dissolve the council, and indicate a new one at Bologna. Cardinal Julian, who at first seemed disposed to dissolve the council, had, however, changed his mind, and was desirous to continue it. His principal reason appears to have been that he thought it would be a favorable opportunity for treating with the Hussites and reconciling them to the church. He himself had been lately in Bohemia on a legation from the holy see, and was more interested in this matter than in the affairs of the Greek church. This reason, however, made Eugenius still more desirous to transfer the council, as the affair of the Hussites had been once definitively settled at the council of Constance, and he did not wish it to be reopened. This appears to solve the problem, why the pope was so reluctant to continue the council at Basel, and why he, nevertheless, permitted it to go on for 6 years. He was anxious in the highest degree to conclude his negotiations for the reunion of the Greek church, and for this purpose to have the council opened at a place convenient for the emperor and patriarch of Constantinople. His legate, however, was determined if possible to continue the council at Basel, for reasons just stated, and when he had collected a sufficient number of prelates, the charge of provoking a schism caused the pope not to press violently his own wishes, but to wait for a more suitable juncture, which in fact afterward arrived, when the legate and the principal prelates of Basel passed over to the pope's side, and the council was transferred to Florence. On Dec. 11, 1431, the pope published a bull dissolving the council of Basel. The cardinal legate obeyed, and declared that he could no longer act as president of the council. Nevertheless he exerted

himself in the most energetic manner to induce the pope to revoke the bull, as did also the small number of prelates, 14 in all, including 6 bishops, who were assembled already. In these efforts they were supported by several sovereigns. After vainly endeavoring to effect an amicable transfer of the council, Eugenius IV. finally revoked his former bull, and on Feb. 14, 1433, published another, authorizing the continuance of the council at Basel. Meanwhile, however, the prelates had not ceased to continue their sessions, and to style themselves an oecumenical council, although the approbation of the pope was withdrawn from them, and the cardinal legate had ceased to preside. In order to understand their proceedings, it is necessary to refer to an act passed at the council of Constance, A. D. 1415: "Every person, of whatever condition he may be, and whatever dignity he may possess, even if it be that of pope, is obliged to obey the present council in the things which belong to the faith, and the extirpation of the said schism, and to the reformation of the church in its head and in its members. . . . Whosoever, of whatever condition, state, or dignity he may be, even if he were pope, who shall obstinately refuse to obey the regulations of this holy synod, and of every other council legitimately assembled, in regard to the aforesaid or other matters, decided or to be decided, which have reference thereto, if he does not repent, shall be punished as he deserves." In regard to this decree, it is said by canonists and theologians: 1, that the prelates of Constance did not intend to assert the superiority of a general council over a pope of certain and acknowledged legitimacy, but merely a provisional supremacy in the case of several claimants, each one of whom had only an uncertain and questionable title; and 2, that this was not a synodical act, for at the time of passing it, only the obedience of John XXIII. acknowledged the council as a general one. The obediences of Gregory XV. and Peter de Lara, embracing several kingdoms, were not present. Even John XXIII. had left the council, which was deprived thus of all appearance of papal sanction. Moreover, the cardinals representing the Roman church, and the ambassadors of the great powers, refused to concur in this decree. The decrees of Constance are recognized as valid, only by virtue of the approbation of Martin V., elected pope at the council by the three reunited obediences. He approved only what was done synodically, and before the conclusion of the council published a bull, forbidding all appeals from the pope to a general council. It is concluded, therefore, that the properly synodical acts of the council are only those framed after the reunion of the three obediences and the election of Martin V., and that, consequently, the declaration of the prelates, quoted above, has no force or validity. The prelates of Basel, however, seized on this decree as a pretext for acting toward a pope, whose title was un-

questioned and universally acknowledged, in the same way that the councils of Pisa and Constance had acted, in an extraordinary emergency, and toward popes of doubtful title. It is not supposed, however, that they were governed by any sentiment of hostility to the Roman see, or any desire to overthrow the supremacy of the pope, but by a desire to carry out at once some measures of reformation, evidently necessary, and which they thought could best be done by a general council. There were several men among them who are highly praised for piety and zeal, and one of these was the celebrated Æneas Sylvius, who has written the history of the council, and who afterward became Pope Pius II. Thomas de Sargani, afterward Pope Nicholas V., was also present at this council. During the period of the suspension of the council by Eugenius IV., the prelates, who, after a time, increased to the number of 80, framed several decrees, declaring the superiority of a general council to the pope, the want of power in the latter to dissolve or transfer it, citing Eugenius to appear within a certain time, &c. After the revocation of the bull of transfer, all these edicts were revoked on the side of the council, and the legitimate sessions recommenced under the presidency of the legates. The declaration of the superiority of a general council to the pope was renewed, however, after the reconciliation, though the legates refused to be present, or sanction in any way the act. A number of decrees of reformation were framed, which are all the acts of the council ever recognized as truly synodical, and as such approved by the holy see. Great efforts were made to enter into negotiations with the Greek emperor, though without success. Finally, Eugenius IV., finding Cardinal Julian, the principal sovereign, and the Greek emperor, altogether disposed to enter into his views, on June 19, 1437, dissolved once more the council of Basel, and transferred the sessions to Ferrara. There had been, from the outset, at Basel, but few prelates and bishops of high rank, and a great number of the inferior clergy, all of whom had been admitted to a vote, in violation of the canons. The cardinals and the principal portion of the prelates of rank, obeyed immediately the mandate of the holy see, and repaired to Ferrara. The patriarch of Aquileia, the archbishops of Arles and Palermo, with a few other prelates, and several hundred priests, remained, and continued the sessions of their so-called council, from this time regarded as a schismatical assembly. They declared several propositions respecting the superiority of general councils to be articles of faith, excommunicated the council of Ferrara, deposed the pope, and elected an anti-pope. Their choice fell upon Amadeus VIII., formerly duke of Savoy, a prince renowned for piety and literary taste, who had resigned his crown some years before, and was living in a half monastic, half literary retirement, at Ripaille, with several other gentlemen of similar tastes. He was

elected in 1489, took the name of Felix V., and continued to bear it during 10 years, after which he abdicated it, and submitted himself to the reigning pope, Nicholas V., who made him cardinal. The council of Basel continued its sessions during all this period, and, finally, the *débâcle* of the council, which had adjourned to Lausanne, put an end to itself by electing the reigning pontiff, Nicholas V., pope.

BASEMENT, in architecture, the base or lowest story of a building. It should have externally an appearance of strength, but its height and proportion to the rest of the edifice are very various, depending on the character of the apartments on the ground floor.

BASEVI, GZOREK, English architect, born at Brighton, 1794, died at Ely, Oct. 16, 1845. He was 6 years with Sir John Soane, whose pupil he was, and subsequently travelled for 8 years in Greece and Italy. In 1819 he commenced practice in London, on his own account, with great success. Belgrave square, in London, was erected from his designs. He was joint architect with Mr. Sidney Smirke of the Conservative club-house, St. James's street, a beautiful building. His best and greatest work was the Fitzwilliam museum, at Cambridge, described as "one of the most ornate, yet chaste and effective classical buildings erected in England during the present century;" this was finished under the direction of Mr. Cookerell. Among the edifices built or restored by Mr. Basevi are the churches in the early English style at Twickenham and Brompton, the Norman church at Hove, near Brighton, and St. Mary's hall, at Brighton, in the Elizabethan style. Having gone to inspect the west bell tower of Ely cathedral, then being restored under his direction, he accidentally fell through an aperture, a distance of 40 feet, and was killed on the spot.

BASHAN. Taken with Gilead, Bashan formed the trans-Jordanic division of Palestine. It was a territory of high table-land that lay east of the river, and was famous for the fertility of its soil. Here were the nomadic tribes of Reuben and Gad, and the half tribe of Manasseh, whose life was so uncivilized that they never dwelt in houses, but only in tents. Here were the fat pastures which raised the famed "kine of Bashan," and the oaks which vied with the cedars of Lebanon, and are so celebrated in the fate of Absalom. The trans-Jordanic territory was conquered in the bloody battle of Esdrei from the Amorites, and Og, the king of Bashan and Sihon, utterly destroyed. Later, it was captured from Israel, after the revolt of the ten tribes, by Hazael, the Syrian king, and afterward recaptured to the Israelites by Jeroboam II. In Bashan, Golan, one of the cities of refuge, was situate. The northern boundary of Bashan is mount Hermon, and its southern the brook Jabbok, while it extended from Jordan, on the west, to the mountains of Gilead and Edom on the east. This trans-Jordanic territory has an interest in scripture history as a

refuge of exiles, as in the case of Ishboeth and David, in earlier times; and here, in the days when the armies of Titus beleaguered Jerusalem, the band of half-Christianized Jews took refuge in Pella; and in the same Pella, until the 5th century, was perpetuated a Jewish Christian church, the exiles of Hadrian, on account of his indignation at the insurrection of Bar-Cokebas. It was in these hill-countries that Jesus retired after his baptism, and again just before his death (John x. 39, 40).

BASHAW. See **PASHA**.

BASHEE, or BATANES, a group of 16 islands of the Philippine archipelago, separated by Balingtang straits from the Babuyanes group, and by Formosa straits from Formosa. The Pyramid peak, on Grafton or Batan, the chief island, is in lat. $20^{\circ} 18' N.$, long. $122^{\circ} 8' E.$ The principal islands, after Batan, are Itabayat, or Prince of Orange, Saptang, or Monmouth, Dampier, Hugos, North and South Bashee; the rest are uninhabited islets. Batan is 12 miles long; Itabayat 10; Saptang 8; Hugos 4½. United area, 220 sq. m.; pop. 4,500. These islands were discovered by Dampier and his companions; and the account he gives of them, and of their inhabitants, corresponds very precisely with what is observed of them at this day. The inhabitants are evidently of the Malay race; although they speak a language greatly differing from the Malay, and partly a dialect of the Tagala. They form, with the Babuyanes, a single alcaldia of the province of Batangas in Luzon. The soil of the Batanes is wholly unfavorable for the production of cereals; but abounds in grassy plains, upon which a hardy breed of ponies are reared, much prized in Manila and throughout the Philippines; and it is remarkable that all attempts, and many have been perseveringly made, to raise this breed of horses upon the fertile volcanic soil of Luzon, have failed; the Manila ladies are obliged to send to the poor and distant Batanes for their favorite palfreys. Hogs and goats are still found in great abundance upon the islands, as was the case during Dampier's visit. In regard to the name, this great navigator says, speaking of one of the group: "It was called Bashee, because we drank there plentifully of a liquor every day we came to anchor at it; and indeed from the plenty of this liquor (called bashee), and their plentiful use of it, our men called these islands the Bashee islands."

BASHI-BAZOUKS, the name of an irregular corps of soldiers, attached to Omar Pasha's army in the last Russian war. The task of organizing them into a regular contingent was first intrusted to Gen. Yussuf, a French officer who had obtained celebrity for his success in enlisting and disciplining the Arabs. He was not successful in this instance, however, and Col. Beatson, who had gained a reputation as one of the best officers of irregular cavalry in the East India company's service, was called to undertake the task. Officers were dispatched to Salonica, Beyrout, Sinope, and Varna,

and a throng of aspirants for military fame and plunder were soon procured from the ranks of the Arnauts, Arabs, Koords, Bulgarians, and other unruly nomadic populations. Col. Beatson eventually succeeded in reducing this human chaos into some sort of military order and efficacy. The corps consisted of 4,000 to 5,000 cavalry. Subsequently a mutiny broke out among them, which, however, was quelled by the exertions of the gallant colonel. Their services were especially put in requisition during the operations at Kertch; but they were never of any great use. However, on the outbreak of grave disturbances in Bosnia, in the beginning of 1858, 3,000 Bashi-Bazouks were sent to the seat of action by the Turkish government.

BASHKIRS, a race, mostly nomadic, who with several other tribes, inhabit the government of Orenburg, whose frontier line extends something over 1,800 miles in a zig-zag course from the Caspian sea to the government of Perm and the boundary of Siberia. The origin of the Bashkirs has been and still is a puzzling question to ethnologists. By some they are considered as springing from the Bulgarians, Nogays, and other Tartars who settled in the valleys of the Ural and amalgamated with the Finns of the region. They speak the Tartar language, and the dress of their females is evidently Finnic. They have a tradition among themselves that they descended from the Buriates, a Mongolian race, dwelling on the banks of the Irkootak, and that their ancestors were driven from their homes by an invasion, and crossing the Ural mountains, settled where they now reside. Dr. Nott, in the "Indigenous Races," places the Bashkirs in the Turkic family, and remarks that there is great similarity generally between the Turkish and the Mongolian. The Bashkirs undoubtedly had their origin near that geographical point where the Turkish and Mongol types of humanity overlap each other. The Bashkirs have been for many years peaceable subjects of Russia, since their subjugation by John the Terrible. They are in a very rude and savage state, though described by travellers as humane and trustworthy. They pay no taxes to the Russian government, but are obliged to furnish post horses and comply with some other civil requisitions. They are the principal protectors to the frontier line already mentioned. In religion they are Mohammedans. They live mainly by pasturage. The gold mines of the territory are rented for a small compensation to Russian miners. They make a sort of chow of horseflesh of which they are very fond.

BASIDOH, or BASSADORE, a decayed village at the west end of the island of Kishm, in the Persian gulf. It is situated in a barren district, and in summer is excessively hot. There is good anchorage in the roads, but the port is of difficult entrance. It is the principal port for British ships in the gulf. An old Portuguese town and fort, of the same name as this village, are now in ruins.

BASIL THE GREAT, SAINT, archbishop of Cæsarea, near the close of the 4th century, one of the most learned theologians and illustrious orators of the Christian church. He was born at Cæsarea, A. D. 328, died Jan. 1, 379. His father and mother were St. Basil the elder, and St. Emmelia. His father belonged to a very noble and wealthy family of Pontus, which had for a long time been Christian. He had 9 brothers and sisters, all of whom, according to the testimony of their intimate friend St. Gregory Nazianzen, were remarkable for sanctity, and 8 of whom are canonized, viz., St. Gregory Nyssen, St. Peter of Sebaste, and St. Macrina. The latter aided her parents in the education of their numerous family. Basil was sent at an early age to be brought up by his grandmother, who lived on an estate, near New Cæsarea, in Pontus, and his education was superintended by his father, who resided usually in Pontus, until his death, which occurred during the minority of Basil. After his father's death, he continued his studies at the best schools in the cultivated city of Cæsarea, where he distinguished himself greatly. From Cæsarea he was sent to prosecute his studies at Constantinople. From Constantinople he went to Athens, chiefly with the view of acquiring an exact and elegant Greek style, and perfecting himself in the art of oratory. It was in this that he chiefly excelled, as well as in the kindred art of logic, and Erasmus calls him the greatest orator that ever appeared on the earth. He applied himself also to philosophy, natural science, medicine, poetry, and the fine arts. During his classical career he was one of the most ardent advocates of the study of classical literature and eloquence in Christian schools. At Athens he met with a former friend of his, afterward his biographer and eulogist, St. Gregory of Nazianzus. Their studies, tastes, moral and religious principles, were the same, and a warm friendship sprung up between them, never afterward interrupted, furnishing one of the most beautiful episodes of ecclesiastical history. The morals of these two youths, as well as their attention to their religious duties, were extremely strict. They were not, however, on this account unpopular among the students and inhabitants of this gay and licentious city, but were the objects of universal esteem. Basil especially was looked upon as an oracle both of divine and human science, and the literary men of Athens, both teachers and students, did every thing in their power to retain him among them. He was, however, determined to devote himself in some way to the service of religion among his own countrymen, although he does not appear to have thought as yet of the priesthood. He returned to Cæsarea, in the year 355, being then 26 years of age, and opened a school of rhetoric with brilliant success. It was just at this juncture, however, that the desire for monastic solitude and for a life of poverty and self-abnegation sprung up in his bosom. This desire was fostered by his sister St. Macrina, and his friend

St. Gregory Nazianzen, and soon ripened into a fixed resolution. He divided the principal part of his property among the poor, and commenced a secluded life, devoted to prayer and penance. In the year 357 he undertook a journey through Syria, Mesopotamia, and Egypt, for the purpose of visiting the most celebrated anchorites and hermits, and the chief monasteries. In 358, he returned home and was ordained lector by Archbishop Dianius, by whom he had been baptized. This bishop adhered to the faith of Nice, but through weakness had acted with the Eusebians and subscribed the creed of Rimini. Basil was deeply grieved at this, and after a time refused to communicate with Dianius, although at the death of the latter, he was reconciled to him, on his protesting that he had always held the Catholic faith. During the same year, he retired to the country seat of his grandmother in Pontus. His mother and sister had already founded a female convent in his neighborhood, on the bank of the river Isis, in which his sister was superior. Basil now founded a monastery on the opposite bank, and in the course of time other affiliated monasteries. He remained in his own convent as superior for 4 years, when he yielded his place to his brother St. Peter of Sebaste. After his election to the episcopate, he continued to watch over these religious homes, he composed rules and spiritual treatises for them, and the principal part of the religious in the East are hence called Basilians. In 359, during a great famine, Basil sold the remaining portion of his property for the relief of the sufferers. One thing was wanting to complete his happiness, the society of his friend Gregory. He wrote to him urging him to join him, which he accordingly did, and has left an interesting account of the life they led in common, in a little hut with a barren garden spot around it, where they found exercise and diversion in cutting stone, carrying wood, planting flowers, and making little canals to irrigate the sandy soil. In 362 Basil went back to Cæsarea and took with him a number of his religious brethren, it seems, to found a cloister. Julian the Apostate was now emperor; he had been Basil's fellow-student at Athens, and he now sent a hypocritical invitation to him to come to his court. This invitation was declined, and was followed by another, which was accompanied by an order to pay 1,000 pounds of gold to the treasurer, or be dragged through the city. Basil replied in a very bold and severe style to his old comrade, who threatened to put to death both Basil and Gregory on his return from the Persian war; but in which he found his own death. Basil now commenced a new epoch in his life. Thus far he had been a simple monk, in minor orders; he now, in his 35th year, commenced his career as a priest, having been ordained by Eusebius, the successor of Dianius. This bishop, for some reason, soon dismissed Basil from the high post among his clergy which he had assigned him. Whatever

motive he may have had, his conduct met with general censure. Basil retired again to Pontus, but in 366, Eusebius was obliged to recall him to Caesarea, to stem the irruptions which Arianism was making, under the auspices of Valens, the second in succession in the empire after Julian. His career as one of the leading spirits in the church now properly commenced. By his eloquence, together with his virtues and commanding talents, he soon established a supremacy over the minds of his countrymen which he retained during his life, and which all the efforts of emperors and powerful nobles could never shake. In 370, on the death of Eusebius, he was elected archbishop of Caesarea, being then 43 years of age. During the remaining 9 years of his life, he presided over this important see in such a manner as to win for himself the reputation of one of the greatest bishops of the church. His entire public career as an ecclesiastic was short, embracing only a period of 13 years, but brilliant and glorious. He died at the age of 51. The whole city followed him to the grave, Jews and heathen wept with the Christians at his death, and St. Gregory of Nazianzus pronounced his panegyric. The principal efforts of St. Basil the Great were directed to the defence of the deity of Jesus Christ against the Arians. On account of this he is styled by the general council of Chalcedon, "the Great Basil, the servant of grace, who has proclaimed the truth to the whole earth."

BASIL I., or BASILIUS, surnamed the Macedonian, ascended the throne of the Eastern empire, after a life of extraordinary vicissitudes and almost incredible adventures. He was born about A. D. 826, in the province of Macedonia, died March 1, 886. At a very early age he was taken prisoner by a party of Bulgarians, who carried him into their country and sold him as a slave. Having at length obtained his liberty, he proceeded to Constantinople, where he was found asleep on the steps of the church of St. Diomedes, in a state of extreme destitution. His fine form and handsome face attracted the attention of a monk, who caused him to be presented to Theophilus the Little, a relative of the emperor, who was very fond of being surrounded by tall and good-looking servants. Basil, chancing some time after to accompany his master to Greece, won the favor of a certain rich widow there, who made him her heir, and whose wealth enabled him to purchase large estates in his native country. He nevertheless continued in the service of Theophilus till 842, when he brought himself to the notice of the emperor, Michael III., by vanquishing, in single combat, a gigantic Bulgarian, who was esteemed the first pugilist of the age. His prowess on that occasion so pleased the emperor that he immediately appointed him to some office about his own person, whence he gradually raised him to the dignity of chief chamberlain. The ambition of Basil now became so apparent, that the courtiers at Con-

stantinople used to remark to each other that "he was the lion who would, in time, devour them all." Basil had been some years married, but he repudiated his first wife, about this period, in order to wed Eudoxia Ingerina, the emperor's concubine. His marriage with this woman was celebrated in the winter of 846, and in the autumn of the following year he became the father of a son by her, who afterward swayed the sceptre of Constantine. Meanwhile the power of Basil was daily increasing, and his spirit growing more and more audacious, until at last he had the hardihood to form a conspiracy against Bardas, on whom the dignity of Caesar had been conferred, and to cause him to be assassinated in the very presence of Michael. Soon after the perpetration of this tragedy Basil was created Augustus, and recognized as heir apparent to the throne. Henceforward, indeed, he may be regarded as virtual sovereign, for in consequence of the inebriety and incapacity of Michael, the whole administration of the government devolved upon him. This anomalous state of things, however, did not long endure. When the emperor perceived himself reduced to the condition of a mere cipher, he became so jealous of his heir, that he resolved on his ruin, but ere his plot could be carried into execution its existence was revealed to Basil, and the fate of its author decided. The former did not hesitate to anticipate the treachery of the latter, and on Sept. 24, 867, Michael III. was murdered. Basil was now proclaimed emperor, and during a reign of over 18 years displayed a vigor and ability which few of his predecessors had equalled. Soon after his accession to the throne, he removed the patriarch Photius, from the see of Constantinople, because of the religious feuds which he had excited there, and installed Ignatius in his place. He sent an expedition, about the same time, against the warlike Paulicians, whom he defeated and reduced to obedience. He then compelled the Arabs to raise the siege of Ragusa, which they had brought to great extremities. In 872 he encountered those restless marauders in Syria and Mesopotamia, and vanquished them in several engagements. On his return from the East he determined to make an attempt to drive the Arabs out of Italy, and confine them to the island of Sicily. He accordingly dispatched an army to the former country under the command of Procopius, who defeated the Arabs as often as he met them, and acquired much glory by his victories, that he roused the envy of his lieutenant, Leo, who resolved on his destruction. In the heat of a general action the traitor abandoned Procopius, and the hero was unfortunately slain while endeavoring to rally his soldiers, who were dismayed at the defection of Leo. Basil, on hearing of this disaster, recalled the author of it, caused him to be mutilated, and sent him into exile. The death of Procopius retarded the progress of the Greeks in Italy, and they did not resume

their victorious career there till Nicephorus Phocas, grandfather of the emperor of that name, was appointed to the command of their army; but in one year from the date of that appointment, the Arabs were completely expelled from that peninsula. While these events were happening in Italy, the peace of the palace at Constantinople was troubled. Basil and his son Leo, who succeeded him on the throne, had hitherto been on the best terms with each other, but suddenly the manner of the father changed and became cold, reserved, and distrustful. A courtier, named Santabaren, had roused the emperor's suspicion and jealousy of the prince by hinting that Leo was contemplating conspiracy and crime. The young man stood in imminent danger of being put to death. At the eleventh hour, however, Basil discovering that he was innocent, restored him to his former place in his affections, and punished the calumniator. The emperor died in consequence of a wound received from a stag while hunting a few weeks before. He made a collection of some of the laws of the eastern empire which was entitled the "Basilican Constitutions," and wrote a small work on the moral, religious, social, and political duties of sovereigns, which he dedicated to his son. This work is still extant; the best edition of it is that of Dransfeld, published at Göttingen in 1674, in 8vo.—BASIL II., emperor of the East, and eldest son of Romanus II., was born A. D. 958, died in the winter of 1025. Romanus had decreed that his infant sons, Basil and Constantine, should reign together under the guardianship of their mother. The rights of the children were, however, long disregarded. Immediately after the death of Romanus their mother married Nicephorus Phocas secundo, and raised him to the throne, nor did the brothers succeed to the sceptre of their father till A. D. 976. Constantine almost from the commencement of his reign gave himself up to a life of luxury and licentiousness in Constantinople, and the whole administration of the government soon devolved on Basil. The reign of Basil II. was one uninterrupted series of domestic and foreign wars. Immediately after his accession, the revolt of Sclerus threatened him with ruin, but the rebel was at length defeated, and forced to take refuge among the Arabs.—Otho II., emperor of Germany, who had married Theophania, the sister of Basil, having laid claim to Calabria and Apulia, in Italy, in right of his wife, and attempted to seize those provinces, the latter excited the Arabs of Sicily against him, who vanquished him in a great battle, and compelled him to seek safety in flight. Basil was repeatedly engaged in war with Almasin, caliph of Bagdad, from whom he made valuable conquests, and with his old allies, the Sicilian Arabs. But his most important war was that which resulted in the conquest of Bulgaria. This war broke out in 987, and lasted, with few intermissions, till 1018. In the first years of it, Basil conquer-

ed a considerable portion of the south-western division of that kingdom. But in 996, Samuel, its king, overran all Macedonia and Thessaly, laid siege to Thessalonica, and penetrated into the Peloponnesus. During his homeward march, however, he was encountered by Basil on the banks of the Sperchius, and defeated. In 999, Nicephorus Xiphias, the general of Basil, captured 2 of the most important strongholds in Bulgaria proper; and in 1002, the indefatigable Samuel again invaded Macedonia and Thrace, and even took Adrianople, but, as in the former case, he was overpowered and driven back to his own kingdom. Basil gave his enemies such an overthrow at Zetunium that they never recovered from the blow. On this occasion the emperor showed no mercy to the vanquished. Of 15,000 prisoners he cruelly ordered the eyes of all to be put out, save those of 1 of every 100, who was to guide his 99 unfortunate brethren in arms to their native land. The cries of these poor wretches, as they approached the camp of their countrymen, had an effect on the Bulgarian monarch which the shouts of his foes could never produce—he fell to the ground insensible, and expired on the 3d day after. The conquest of Bulgaria was, however, not entirely completed till 1018, when it became a Greek province and subjected to the rule of a Greek governor. In his latter days, Basilus contemplated the expulsion of the Arabs from Sicily; but in the midst of his preparations for it, he was seized with an illness which terminated his existence. To expiate the sins of his youth, Basil wore the hair shirt of a monk beneath his imperial robe, and lived the abstemious life of an ascetic. Notwithstanding his incessant wars, he accumulated from his surplus revenue during his reign the enormous fortune of £8,000,000 sterling.

BASIL, a Bulgarian physician, the founder of a religious sect called Bogomiles (Slavonic *Bog*, God, and *milotta*, have mercy on us), who was burnt alive at Constantinople, in 1118. He repudiated marriage, and favored the communistic principle in regard to intercourse between the sexes. The Bogomiles believed that before the birth of Jesus Christ, God had a son of the name of Sathaniel, who revolted against his father, but who, after having been expelled from heaven, established himself on earth, where he introduced himself as a god to Moses, who therefore came to the Mosaic law through a spurious channel. Jesus Christ, they say, was sent to the world for the purpose of destroying the power of Sathaniel; in fact, he banished him to hell, after cutting off four letters of his name, and gave him to the infernal regions under the abbreviated name of Satan. Basil rejected the doctrine of the resurrection, the books of Moses, and the eucharist, abolished baptism, characterized churches as devilish, and would not recognize any liturgy but the Lord's prayer. The priests and monks who lived in churches, with burial grounds attached, he compared to the low demoniac personages alluded to in the

Scriptures. The monks who lived in convents and monasteries, he likened to foxes, who hide themselves in their dens. He condemned, also, all cruelty to animals, and objected against the eating of meat and eggs. The emperor of Constantinople, Alexius Comnenus, feigned sympathy with his religious doctrines. Basil fell into the snare, and while he made an exposition of his religious system, a concealed reporter took down every word he said. This report was put in evidence against him before the council which the emperor convoked at Constantinople. Basil was called upon to retract, to give in his adhesion to Christianity—in fact, to make his choice between the cross and the stake. He remained firm to the end, and while the flames surrounded him, he still clung to the hope that angels would come to his rescue. His sect was broken up after his death, and the last of the Bogomiles were sentenced to death in 1143, at the council of Constantinople. The emperor of Constantinople was so much afraid of the influence which the doctrines promulgated by Basil might have upon orthodox Christendom, that he caused a refutation of his doctrines to be written and published under the title of *Orthodoxa Fidei Panoplia Dogmatica*.

BASILAN, an island of the Malay archipelago, one of the Sooloo group, separated by the straits of Basilan, 12 miles in width, from the island of Mindano. Its northern point is in lat. 6° 42' N., long. 121° 30' E.; area, 355 geographical sq. m.; pop. 13,000. The inhabitants are evidently of Malay origin, but their language partakes more of the Tagala, the principal language of the Philippines, than of Malay. Mr. Dalrymple, hydrographer to the admiralty, gives a list of 170 words, of which 62 are Malay, and the rest derived from Philippine dialects. The companions of Magellan touched at this island, which Pigafetta calls Taghima. The island has been known ever since that period, as a resort of the most desperate pirates in the archipelago. Their forays upon the industrious inhabitants of the Philippines, have provoked several invasions of the island by the Spaniards, who, very recently, have established garrisons at different points, driving the pirates into the mountains; and have annexed the island to the province of Zamboango, in Mindano.

BASILIAN MONKS, or MONKS OF ST. BASIL, a religious order founded by St. Basil the Great, about the middle of the 4th century. When the saint retired into the deserts of Pontus he found there a vast number of solitaries whose manner of life he strove to copy. But his eminent virtues soon raised him from the position of a disciple to that of master. Crowds of followers gathered around him, and so rapidly did their number increase that he shortly found it necessary to provide for their accommodation an extensive monastery, and to embody in a code of written laws the instructions for their conduct, which he had hitherto given by word of mouth alone. These rules were published in 368, and at once received the sanc-

tion of Pope Liberius, whose approval was confirmed by many succeeding pontiffs. Authorities disagree as to the location of the first Basilian monastery, some placing it at Seleucia in Syria, and others near Neocæsarea in Pontus, where the saint's sister Macrina had already opened a retreat for virgins. The new order spread with remarkable rapidity throughout the East, and it is said that before his death Basil saw himself the spiritual father of over 90,000 monks. In the 8th century they were treated with great severity by Constantine Copronymus, a violent iconoclast. Many were put to death, many were banished, and throughout the empire desolated monasteries bore witness to the rigor of their persecution. The Basilian rule was translated into Latin by Rufinus, and thereupon passed into the West, where it became the basis of all monastic institutions up to the time of St. Benedict. Great numbers embraced it in Italy, Sicily, and Spain, but though calling themselves by the common name of "Monks of St. Basil," these various communities were independent of each other until Pope Gregory XIII. united them under one head, and at the same time corrected several abuses which had crept in among them during the lapse of years. Various causes have since led to their decline in the West, but the order is still large and important. Their principal monastery is that of St. Savior at Messina. In Spain, where they are very numerous, the Latin rite is universally followed; in Italy and Sicily they conform to the ritual of the Greek church, with a few modifications. At Naples and Pagan, however, there are monasteries of this order where the Latin rite is observed in full. Most of the monks of the Greek church in Russia claim to belong to the order of St. Basil, but if so they have deviated widely from their original rule. The historians of the order state that it has produced 14 popes, numerous patriarchs, cardinals, and archbishops, 1,805 bishops, and 11,805 martyrs. There is a institution of Basilians at Sandwich, C. W.

BASILICA. I. The Romans applied this name to stately buildings, of an oblong shape and four-cornered, adorned with Corinthian columns, and consisting of a great hall, with side wide porticos, tribunals, and tribunals, used in courts of law, for meetings of the citizens, and for a species of exchange, and bazaar for the merchants, and various other public occasions. The conception of such buildings originates with the old Athenians, with whom, as the name signifies, they were intended for the public office where the king occasionally transacted business. The first basilica at Rome was built by Cato the Elder, and called *percia*; the name of the second was *optimia*; the third built by Paulus, in such a magnificent style that some of the Romans designated it as *regia Pauli*; the fourth, *basilica Julia*, built by Vitruvius, at Fanum, was for Julius Cæsar, and supported by 100 marble pillars, in 4 rows, and enriched with decorations of gold and precious stones, and containing 18 judgment-seats.

for the prætors who presided over the courts. This basilica was also used for the reception and audience of foreign ambassadors. It is probable that Rome possessed basilicas in all the different forums of the city. The only one of which there are considerable remains left is the basilica of Trajan, which formed a part of the forum Trajanum. Another basilica of the Corinthian order, was discovered on the Palatine hill. Two of the most celebrated basilicas were built at Palestrina, *Fulvia* and *Amilia*, a part of the latter being preserved in the capitol among the marble fragments of the plan of Rome. One of the most perfect basilicas of antiquity existed at the forum in Pompeii. II. Many of the Roman basilica were transformed into churches by the early Christians. Hence we find the name of basilica frequently used to signify a church by St. Ambrose, St. Jerome, and other ecclesiastical writers of the 4th and 5th centuries. There are 12 churches in Rome called basilicas, but the name is chiefly applied in modern times to the basilicas of S. Giovanni Laterano and S. Pietro, which were founded by the emperor Constantine. The basilican style has been revived in Italy, and of late also at Munich, in the church of St. Bonifacius, at Berlin, in the St. James's church, &c. An interesting work on the subject of the Christian basilicas of Rome was published by Bunsen, at Munich, in 1848.

BASILICATA (Anc. *Lucania*), a province of Naples, area 4,162 sq. m., having the gulf of Taranto on the south-west, bounded N. by Apitanata, E. by Bari, W. by Principato Ultra and Citra, and S. by Calabria Citra. The Apennines traverse the surface, most of which is high and broken, although along the shores of the gulf stretches a beautiful plain, watered by a number of small streams. The soil is not very fertile, but produces cotton, tobacco, saffron, and the grape. Potenza, Francavilla, and Mursi, are the principal towns. In December, 857, frightful earthquakes occurred in this and other provinces of the kingdom. The shocks commenced on the night of the 16th, when 2 violent convulsions were experienced, and continued at intervals up to about the end of the month. Nearly the whole of the Basilicata was laid in ruins. Towns and villages were overthrown, and in some places every house is said to have been destroyed. Tito, Iarsico-Nuovo, Saponara, Montemurro, and Ramutola, were among the towns visited most severely. In 1 or 2 of these every inhabitant is said to have perished. Potenza, the capital of the province, was utterly ruined. The few houses which remained standing after the disaster were torn down, and the city will be rebuilt in another spot. The number of persons who perished by this disaster was immense. The entire kingdom the loss of life was variously estimated at from 80,000 to 43,000, the greater part being in the provinces of Basilicata and Principato Citra. Pop. in 1850, 501,222.

BASILIDES, a famous Gnostic who flour-

ished in the 2d century. The great fundamental points of his faith were emanation and dualism. According to his doctrine there were 365 spheres from earth to heaven. At the head of each of these spheres, as its creator, was an angel; God was the supreme creator. The Basilideans therefore constructed, to express that God, the word *abrazas*, made from those Greek letters which, according to the numeral system in use, stood for 365. Basilides supposed that human souls came up by a slow gradation through the lower forms of life, and even of things commonly called inanimate. Thus, with Basilides, there was no dead nature. All was struggling in birth with man. He denied the sacrificial character of Christ's death, believed in a kind of fate, and in the final redemption of the race. His doctrinal system, in many respects, was like that of Valentine. He used the apocrypha in his arguments, and bordered upon the faith of the Ebionites, in some degree. He was not ascetic in the tendency of his doctrines, though in his own life he was abstemious. He held that Christ had no real but only a phantom body, and that Simon the Cyrenian was really crucified in his place. Eusebius charges him with having forged some prophetic writings. By some early Christian writers a gospel of Basilides is mentioned. On the whole, we may regard the Basilidean school as an important movement in Christian theology. Neander considers it as occupying a middle ground between the common Gnosticism and Neo-Platonism.

BASILIO DA GAMA, José, a Brazilian poet, born in 1740, at San José, supposed to have died at Lisbon, in 1795. His principal poem gives a picturesque and romantic account of the bloody wars which the Portuguese waged, in 1756, against the natives of Paraguay. He was a protégé of the Brazilian minister Pombal, who gave him an employment in his cabinet. He shared Pombal's exile, and also dedicated verses to him in token of his gratitude. On his return to Rio de Janeiro, he was favorably received by the authorities and the literary notabilities, and with their coöperation he became one of the founders of the first Brazilian academy. In 1790 he again had to resort to flight, and he succeeded in escaping to Lisbon. He was the author of many lyrical pieces and sonnets, and of a poem, *Quitubia*, written on an African chieftain whose devotion to Portugal engaged the poet's sympathy; but the most abiding monument of his genius is his "Uruguay," which is still popular wherever the Portuguese language is known.

BASILISCUUS, brother of Verina, wife of Leo, emperor of the East, died in 477. In his youth he had obtained some successes against the Scythians, and, in 468, through the influence of his sister, was appointed to the command of the immense armament fitted out at Constantinople against Genseric, king of the Vandals in Africa. This expedition consisted of upward of 1,100 vessels, conveying soldiers and sailors to the num-

ber of more than 100,000 men, and its equipment is said to have cost about \$25,000,000. But this vast fleet, after reaching the coast of Africa in safety, was altogether destroyed or dispersed by Genseric, either through the incapacity or the treachery of its leader, Basiliscus. The latter escaped to Constantinople, and obtained the pardon of the emperor only by the earnest intercession of his sister, the empress. After the death of Leo, and of his successor, Leo II., in 474, Basiliscus usurped the imperial throne. But he was unable to sustain himself in this position, and was not long after overthrown and put to death by Zeno, the legitimate heir.

BASILISK (*basiliscus*, Laurenti), a genus of saurian reptiles of the family of *iguana*, inhabiting the northern parts of South America, the West Indies, and Central America. The genus is characterized by a thin triangular fold of skin rising vertically from the occiput and inclined backward, resembling in shape a Phrygian cap; the external edge of the posterior toes is bordered with a scaly serrated fringe; the back and tail are surmounted, in the adult male, by an elevated crest, supported on the spinous processes of the vertebrae, of varying height, and serrated; in one species this crest resembles the dorsal fin of a fish, while in the other it is merely a serrated scaly ridge; between the dorsal and caudal portions the crest is interrupted, and both are covered with thin scales disposed in series parallel to the spinous processes. Under the neck is a rudimentary gular crest, behind which is a well-marked transverse fold. There are 5 or 6 teeth on each palatic bone, and 50 to 60 in each jaw, pointed and subconical, or compressed. It is distinguished from the iguana by the absence of femoral pores. The head is covered with small many-sided ridged scales; the body above has rhomboidal ridged scales, arranged in transverse bands; the ventral scales are either smooth or ridged, according to the species. The limbs, especially the posterior, are very long, as are also the toes, which are slender and armed with nails; the body is nearly cylindrical, and the tail compressed, and 3 times as long as the trunk. Two species are described: 1. The hooded basilisk (*B. miratus*, Daudin) has the above-mentioned cap and dorsal crest, and the ventral scales smooth, without transverse black bands on the back; the color above is yellowish brown, beneath whitish; the sides of the neck are leaden brown, and the throat is marked by longitudinal bands of the same color; sometimes there is a white band bordered with black on the sides of the neck and back; the length varies from 24 to 30 inches, of which the tail measures about two-thirds. 2. The banded basilisk (*B. vittatus*, Wiegmann) differs from the preceding in having only a slight serrated crest along the back and tail, the ventral scales ridged, and black bands across the back; the general color is the same, with the exception of dark brown spots on the head, chest, and limbs, and 6 or 7 black bands extending across

the back to the ventral surface. This species was considered by Kaup as belonging to a different genus, which he called *corythaelus*; it formed the genus *adicrophus* of Wagner. Notwithstanding its forbidding appearance, the basilisk is a perfectly harmless animal; it feeds on insects, and lives principally on trees, which it climbs with great dexterity; it is supposed that the dorsal crest may serve to steady its motions as it springs from tree to tree.—The ancient poets imagined an animal, which they called basilisk, whose breath poisoned the air, whose glance was death, and whose presence was fatal to all other creatures, including man; they supposed it to have the form of a snake, and to be produced from the egg of a cock brooded upon by a serpent. The most distinguished ancient writers relate wonderful stories about this fabulous animal, which some celebrated modern authors have been ready to believe. The basilisk of the Bible is a true snake improperly called "basilisk" in the Greek version, and in the English translation "cockatrice," an animal as fabulous as the ancient basilisk. Chaucer and Shakespeare allude to the power of the basilisk to destroy by the poison of its breath, and by the fascination of its eyes.

BASIN, in geology, the term expressing the area occupied by any group of stratified rocks which are bounded by two opposite anticlinal axes. In this area the strata thus dip from the two opposite sides toward each other, attaining their greatest depth in the centre. These basins are usually of elongated shape, resembling a canoe. The "London basin" and the "Pis basin" are in the strata of the tertiary marls, clays, &c., which rest upon the strata of the upper secondary. The term is usually applied to the coal measures, as the Richmond coal basin or coal field, which includes the coal bed and associated slates, which occupy a basin-shaped depression in the granite, in the southeastern part of Virginia. The great coal basin of the interior covers an area equal to that of several great states, and the strata it contains are the highest rock formations of the region in which they occur, and also in many places occupy the most elevated portions of the Appalachian chain.—In geography, a basin is a general natural depression of the surface, without regard to the stratification; as, the basin of either of the great lakes, the basin of the Atlantic ocean, that of the gulf of Mexico, &c. That of the Atlantic ocean is, like many of the geological basins, in the form of a long wedge, which probably extends from pole to pole.

BASINE, or **BAZINE**, wife of Childeric, king of the Franks, and mother of Clovis, reigned about the middle of the 5th century. Childeric, when young, having incurred the displeasure of his subjects, and been dethroned by them, was constrained to fly to Germany, where he found an asylum at the court of the king of Thuringia. Basine was then the wife of that prince. Childeric was afterward recalled to France

Basine fled from her husband, and coming to the king of the Franks: "I know," she said, "your merits and your courage; so I have come to be your wife; and you must know that if any one, to my knowledge, had been more able and courageous than you are, I would have gone to him." Childeric took her as his wife, and became by her the father of the founder of the Frankish kingdom in Gaul.

BASISI, one of the many wild tribes to be found in the Malay peninsula, and called by the civilized Malays *Orang-Benua*, or aborigines.

BASKERVILLE, JOHN, an English printer and type-founder, born in 1706, died at Birmingham, Jan. 8, 1775. After having been a writing-master and a tombstone-cutter in Birmingham, he made a fortune as a japanner in the same place. He then directed his attention to type-founding, greatly improving on the imported Dutch type, which was previously generally used in England. His matrices were so sharply cut and finely shaped that they would be admired even now. He also improved the quality of printing ink, and published editions of several of the classics, which were much valued. His Bible and Book of Common Prayer are now rare, but they are beautiful specimens of typography. His printing has a rich purple-black hue, supposed to be made by subjecting each sheet, as it came from the press, to pressure between heated copper-plates. Mr. Baskerville gained more honor than profit by his printing business. He retired from its superintendence in 1765, but the Baskerville press continued to be highly esteemed in Birmingham, until the Priestley riots of 1791, when the mob destroyed the printing office.

BASKET, a vessel made by interweaving wigs, or reeds, grasses, leaves, metal or glass wire, whalebone, or any similar material. Baskets differ greatly in their forms, sizes, and uses to which they are applied; from the rudest tents of necessity to the most delicately wrought articles of luxury and taste. A breast-work on the parapet of a trench is sometimes formed of what is called baskets of earth (*corbeilles*), which are so placed as to allow the soldiers to fire between them, sheltered from the fire of the enemy.—**BASKET MAKING** is one of the simplest and most ancient of the arts. The contrivance of fastening together branches, reeds, or grasses by interweaving others transversely, would be suggested to the lowest intelligence, even without the frequent examples of it seen. The Romans found wicker boats covered with skins, in use among the ancient natives of Britain. Round boats of wicker-work covered with bitumen or skins were used on the Tigris and Euphrates in the times of Herodotus. Similar boats of about 7 feet in diameter are still used there. In India boats of a similar form and construction are still in use in crossing the less rapid rivers. They are made of bamboo and skins, requiring only a few hours' labor; they are about 12 feet in diameter and deep, and are navigated with oars or poles, or

towed by oxen or men. They are sometimes used to transport large armies and heavy artillery. The ancient Britons manufactured wicker vessels with extraordinary skill and ingenuity. Their costly and elegant baskets are mentioned by Juvenal in speaking of the extravagance of the Romans in his time. The natives of South America make baskets of rushes so closely woven as to hold liquids. Their manufacture and sale throughout the Spanish countries is very extensive. The natives of Van Diemen's Land weave similar water-tight vessels of leaves. The Caffres and Hottentots possess equal skill in weaving the roots of certain plants. Shields in ancient times were constructed of wicker-work, plain or covered with hides; they are still thus made among savage tribes. In England the bodies of gigs are sometimes constructed of wicker-work. On the continent of Europe Holstein wagons, carriages drawn by 2 horses and carrying several persons, are made entirely of wicker-work, except the wheels. In different parts of the world, houses, huts, gates, fences, sledges, shoes, beside articles of use and ornament, are formed by this ancient and universal art.—In making baskets, the twigs or rods, being assorted according to their size and use, and being left considerably longer than the work to be woven, are arranged on the floor in pairs parallel to each other and at small intervals apart, and in the direction of the longer diameter of the basket. Then 2 large rods are laid across the parallel ones, with their thick ends toward the workman, who is to put his foot on them, thereby holding them firm, and weave them one at a time alternately over and under those first laid down, confining them in their places. This forms the foundation of the basket, and is technically called the *slat* or *slate*. Then the long end of one of these two rods is woven over and under the pairs of short ends, all around the bottom, till the whole is woven in. The same is done with the other rod, and then additional long ones are woven in, till the bottom of the basket is of sufficient size. The sides are formed by sharpening the large ends of enough stout rods to form the ribs, and plaiting or forcing the sharpened ends into the bottom of the basket, from the circumference toward the centre; then raising the rods in the direction the sides of the basket are to have, and weaving other rods between them till the basket is of the required depth. The brim is formed by bending down and fastening the perpendicular sides of the ribs, whereby the whole is firmly and compactly united. A handle is fitted to the basket by forcing 2 or 3 sharpened rods of the right length down the weaving of the sides, close to each other, and pinning them fast about two inches below the brim, so that the handle may retain its position when completed. The ends of the rods are then bound or plaited in any way the workman chooses. This is a basket of the rudest kind. Others will vary according to the artist's purpose, skill, and materials. When whole rods or twigs are not adapted to

the kind of work required, they are divided into splints and skeins. Splints are made by cleaving the rod lengthwise into 4 parts, by means of an implement consisting of 2 blades, crossing each other at right angles, the intersection of which passes down the pith of the rod. These splints are next drawn through an implement resembling a common spoke-shave, keeping the pith presented to the edge of the iron, and the back of the split against the wood of the instrument. The split is then passed through another implement, called an upright, to bring it to a more uniform shape. This implement consists of a flat piece of steel, each end of which has a cutting edge, like that of an ordinary chisel; this piece is bent round, and the edges are made to approach each other as near as desired, by means of screws, the whole being fixed into a handle. By passing the splints between these two edges, they are reduced to any required thickness. The implements required in basket making are few and simple, consisting, beside those just mentioned, of knives, bodkins, and drills for boring, leads for steadying the work while in progress, and when it is of small dimensions, and a piece of iron called a beater. The splints of various kinds of wood, particularly certain species of ash, elm, and birch, are extensively employed in basket work. These splints are obtained by beating logs of the wood with a maul, thus loosening and separating the different layers or rings into narrow strips. This is the simple and primitive process, and is necessarily slow, and restricted to woods of a free texture. Several machines have been invented and are now employed for the manufacture of splints, by which different kinds of wood, prepared by steaming or otherwise, are cut or rived into the required form.—Basket willow, and osier, are terms commonly applied to the species of *salix* most used in basket work. In France and Germany the osier has been, for a long time, extensively cultivated. It has also been largely exported from those countries in its unmanufactured and manufactured state. Little attention has been given to its cultivation in America, until very recently. The soil and climate, however, prove to be well suited to bring the plant to perfection and to produce it abundantly. It is found, however, that difference of soil and climate considerably affects its quality; that some species esteemed the best in Europe, prove inferior here, while others of inferior character there, here yield an excellent product. The value of the osier, in both the crude and the manufactured state, annually imported into this country, is about \$5,000,000. Its price here is from \$100 to \$180 a ton in weight. The cost of raising it is found to be from \$30 to \$50 a ton. The annual product of an acre is from 1 to 4 tons. There is no doubt of the practicability and profit of its cultivation here to any extent the market may demand.—The following are the species of willow most generally used in basket work: *S. viminalis*, or white osier, considered superior to other

kinds in smoothness, whiteness, length, and flexibility. It is an exceedingly vigorous grower, and in cold wet seasons and in moist soils, does not always fully mature the extremities of the shoots. In some parts of the United States it fails to yield good shoots. It grows to a large size. *S. purpurea*, red osier, purple osier, is very productive, and flourishes best in a rich, deep, moist, but not wet soil. Its shoots are long, polished, and of ashy olive color, and for fine whole work are inferior to none. It is also valuable for live fences, for which it is much used in England, in fencing against hares and rabbits, as well as sheep and cattle, the leaves and bark being so intensely bitter that they will touch neither, and the limbs and twigs are long, tough, and flexible, that they may be woven in any required way. *S. vitellina*, or yellow osier, grows to a moderate height; its branches are of a bright yellow color. The greater part of this osier, as also of the red, is in Europe employed without removing the bark, which gives greater strength. They are in general use in domestic economy and in agriculture, for withes, crates, baskets, for fencing trees and vines to their supports, and divided into 2 or 3 splints, for hoop-poles. *S. Forbyana*, Forbes's osier; this, and the *maritima* and the *purpurea*, are the most highly esteemed. It is hardy and productive, and very tough, with shoots slender and branchless, growing sometimes 10 feet long in a season; they do not whiten well, but are of great excellence when peeled. *S. Triandra* is highly recommended for cultivation in North America. It is said to be tough, pliable, and productive, requiring less drainage than others; it also grows well in a deep dry soil, early ripening the extremities of the shoots, which renders it suitable for high latitudes. It is preferred by German manufacturers for split work. The varieties, *decipiens*, *Russelliana*, are of slender and handsome growth, with smooth, polished branches, and often cultivated. *S. caprea* is remarkable for its beauty and rapid growth, and is much used as an ornamental and shade tree in England. The bark is superior tanning properties, and the wood is of fine grain and susceptible of as high polish as rosewood or mahogany. It is much employed for shoe lasts, boot trees, cutting boards, paddles, and gun stocks, and house timber, and in powder manufacture. The Huntingdon willow, though sometimes used for baskets, is more extensively employed for hoops and fences. In planting it for fences, the ends of the shoots are inserted in the ground, and the tops are woven into a kind of trellis work, and a rope is passed around to keep them in shape for the first 2 years. When grown, the tops are cut off yearly, thus obtaining a fence and a crop from the same ground. The movable live fences of England are made of this willow. It is hardy, vigorous, and beautiful, and is well suited to fence prairies and land swept by frosts. Its flowers, which appear in immense quantities in the earliest spring, make it valuable

to bee-keepers.—For an osier plantation, the soil should be deep and well drained and thoroughly worked with the plough or spade. A low, level, moist situation is the best, and one that can be flowed with water in the dry months. Grounds covered with standing water, peat, moss, quagmires, and situations exposed to dry parching winds, are not at all suitable. The osier is propagated by cuttings. These are sunk $\frac{1}{2}$ their length in the soil by means of a dibble, in rows 3 feet apart, the cuttings standing 1 foot apart in the rows. The cuttings are 8 feet in length, sometimes less. If they are set somewhat diagonally in the soil, so that no part is buried too deep to throw out roots, the growth will be more vigorous; and by planting them near together, the superfluous ones to be thinned out when necessary, and leaving only a few buds to grow, the shoots of the first crops will be longer, straighter, and more free from branches. It is necessary to keep the ground clean for the first few years at least, and at all times if the best osier is intended to be grown. Ordinarily two ploughings a year between the rows will suffice. When ploughing is impracticable, the grass must be removed with a hoe or sickle. The crop of the first year is generally of little value; but it must be carefully cut nevertheless, in order to have a good growth of shoots the next year instead of bushes and branches. The shoots for market are sometimes cut in November, and from that time to April are equally good. They should be cut at a distance of $\frac{1}{4}$ to $\frac{1}{2}$ of an inch from the stump. They should be tied in large bundles and their lower ends placed in water till they are peeled in April, May, or June. The operation of peeling is performed by drawing the shoots through an iron-edged implement called a brake. A simple instrument is sometimes made for this purpose by partially splitting lengthwise a small aspen through the centre, making a Y, through the crotch of which, and against the edges of the halves, the osier is drawn and its bark rapidly removed, injuring the wood less than by the use of iron. They are further cleaned if necessary by hand with a sharp knife, and then exposed to sun and air till cured, when they are to be put away in a dry place. Those not to be peeled and not soaked in water must also be carefully cured before the packing away, since the natural moisture of the plant may greatly injure its value. Mr. George H. Colby, of Vermont, has invented a machine for peeling willow shoots, which is said to prepare them for sket-making in the best manner, and with great rapidity, enabling the grower to make considerable saving.

BASNAGE, JACQUES, a distinguished French scholar, statesman, and theologian, born at Rouen, *g.* 8, 1653, died Dec. 22, 1722 or '3. He was educated at Saumur, in languages and literature, first at Geneva and Sedan successively, in the *g.* He was proficient in Greek, Latin, Polish, Italian, and English at the age of 17, began his clerical career as a minister of his

native parish (Rouen), in 1676. But in 1685 the Protestant religion was excluded from Rouen, and Basnage retired to Holland. Through the influence of his personal friend, Heinsius, he was chosen one of the pastors of the Walloon church at the Hague, where he, of whom Voltaire said he was fitter to be minister of state than of a parish, began his political career in a secret negotiation with Maréchal d'Uxelles at the congress of Utrecht, and afterward in the negotiations of a defensive alliance between France, England, and the states-general. In these matters he won for himself a high reputation as a statesman. As a reward for his political services, his confiscated estates at Rouen were restored. He was a diligent author, as his many theological, literary, and political treatises testify, and a thorough reformer in theology, and yet so moderate in his conduct, as to be equally esteemed by Catholics and Protestants.

BASQUES, an ancient and peculiar people, who, amid the revolutions of empires and the progress of civilization, seem to have lived unchanged on the 2 slopes of the Pyrénées mountains. They number, at present, 784,400 individuals, of whom 180,000 are subject to France, dwelling in the department of Basses Pyrénées, and the remainder occupy the Spanish provinces of Upper Navarra, Biscay, Guipuzcoa, and Alava. The last 3 provinces, in which they form the bulk of the population, are called the Basque provinces. From the remotest times the Basques have remained unsubdued in their mountain homes, and neither Carthaginian, Roman, Gothic, Saracen, French, nor Spanish domination has been able to efface their distinctive characteristics, to corrupt the purity of their race, or to modify their peculiar usages. They are of middle size, compactly built, singularly robust and agile, of a darker complexion than the Spaniards, with gray eyes, and black hair. With a naive simplicity, they are also proud and impetuous, enthusiastic patriots, bold smugglers, merry, social, and eminently hospitable. The women are beautiful, skilful in performing men's work, and especially remarkable for their vivacity and their supple grace. The whole race has a passionate love for games and festivals, for rapid dances, the game of tennis, and music upon the flageolet and tambourine. The national dress is a red jacket, long breeches, a red or brown sash, a square-knotted neck-tie, hempen shoes, and pointed caps. The women wear head-dresses of gay colors over their variously braided and twisted hair. In the social relations of the Basques, patriarchal manners and habits prevail. The sexes mingle freely with each other, yet morality is nowhere better observed, and a newly married pair receive a dowry from all their neighbors. The arts of agriculture are but little advanced, yet the fertility of the soil and the laboriousness of the occupants produce an abundance, and the poor are always liberally supported. Among the Spanish Basques there

is an almost universal equality of conditions; the nobility, who derive their origin chiefly from the time of the Moorish wars, being few in number. There are few cities or villages, but small houses lie scattered upon nearly all the heights. In their political constitution, they are divided into districts, each of which chooses annually an *alcalde*, who is both a civil and military officer, and a member of the supreme junta, which meets every year in one of the principal cities for deliberation upon matters of general interest. The *alcaldes* are always old men and fathers of families. Their rights are protected by the *fueros*, or written constitutions, which were granted them by ancient Spanish kings. In their religion they are Catholics, and they respect priests and monks, and delight in pious legends.—Whatever may have been the origin and ethnological relations of the Basque people, the last remnant of the old race of Iberians, they have enjoyed an immemorial reputation for valor in their present seats. They were the Cantabri of the Romans, admired by those sturdy conquerors for their vigorous defence of liberty, and alluded to by Horace as a people hard to be taught to bear the yoke. Later, after the fall of Rome, Charlemagne having carried his arms beyond the Pyrénées, was returning to France, when the Basques suddenly fell upon his troops in the famous defiles of Roncevaux. In vain the fabulous Roland exhibited his immortal prowess, celebrated by the old romancers. His army was crushed, he himself was slain with the *élite* of the paladins of Charlemagne, and the great emperor was obliged to seek safety by flight. A song is still sung by the shepherds upon these mountains in memory of this victory. The Spanish Basques long maintained themselves independent, though situated between the rival monarchies of Navarre and Castile, and in the midst of invasions and revolutions about them; and though in the 13th century they were incorporated into the Castilian monarchy, they retained their old liberties, extorted the free constitutions called the *fueros*, were still governed by their famous juntas, paid no taxes, and enjoyed throughout Spain all the exemptions of the nobility. The Spanish constitution of 1812 stripped them of their long-possessed privileges, which however they recovered in 1828, after an energetic insurrection. When, after the death of Ferdinand VII. in 1833, Isabella determined to take their privileges from them again, they embraced with ardor the cause of Don Carlos, and after 6 years of rebellion recognized the young queen only when the reestablishment of the *fueros* was promised them. The entire restoration of their privileges followed in 1844 under Narvaez.—The proper name of the Basque language is *Euscara* or *Eusquera*, which degenerated into *Vasc*, *Bascongada*, and in the French provinces into *Bascence*. *Eusk* or *Eao* signifies, probably, sunrise or east, pointing to the original country of the Basques. The people call themselves

Euscaldunac, people of the language, designating all strangers as *Erdaldunac*, people of foreign language. Some natives derive the name of Bascon from *basocoa*, forest-dweller. There are 8 principal dialects of this language, viz. the *Guipuztecoan* (as written in the Basque language), the purest, pleasantest, and most developed of all, spoken in Guipuzcoa and Alava; the *Vizcayan*, and the *Labortian* of Lower Navarre, Lahort, and Zuberoa, which is softer than the Vizcayan. Great diversity of opinion exists among the writers on every thing concerning not only the history but the language of this brave, hardy, industrious, freedom-loving people, whose origin is wrapt in more mystery than that of the Celts, being as problematic as that of the Pelasgi, and of the Drawidas in the extreme S. E. of Asia. It is, however, certain that the Euscara entirely differs from the languages of the Indo-European family. It has some common traits with the Magyar, Osmanli, and other dialects of the Altai family; as, for instance, with the Finnic on the old continent, as well as with the Algonquin-Lenape language, and some others in America. This similarity consists in the polysynthetism of words (blending several words into one), especially in the conjugation of verbs, and in the abhorrence of combinations like *cr, gr, pr, pl, tr*, &c. But there are few coincidences of the roots of words. For this reason, the Bascongados are classed by some with the remains of the Finnish stem of Europe, in the Uralic family of nations; by others in that of the Allophyllic race. The Euscara is the primitive language of the inhabitants of Spain, who were called (rather geographically than ethnographically) Iberi by the classic writers, were settled in the whole peninsula, in a part of Aquitania, partly in Sicily, Sardinia, and Corsica, and traces of whom are found in Italy and in Thrace. By an invasion of a peculiar branch of Celts, in pre-historic times, these aborigines were mixed, in a part of the peninsula, with the invaders, thus producing the Celtiberi. A portion of these are renowned as having vigorously resisted the Romans, who called them Cantabri. Many writers confound the latter with the aboriginal Basques; but the inhabitants of Iberia, at the time of the Roman invasion, were of 8 sorts, viz.: the Iberi, the Celtici (as the Romans called them instead of Celte, in Galicia, and some scattered places), and the Celtiberi, to whom the Cantabri belong. The settlements of Phœnicians, Greeks, and Carthaginians, on the coasts of the Mediterranean sea, are of much later date. There are few traits common to the Celtic dialects and to the Euscara, so that the names of places and of men found in the Greek and Latin writers, may safely be distinguished into Iberian and Celtic. The Euscara has no words beginning with *r, f, st*; it has more sibilants than the Greek, viz., *s, z*, hard and soft *ts*; it is very rich in words and grammatic forms; it is full and well-sounding, and very perspicuous in its etymons

(true significant elements). Its predominant combinations of sounds are: *ar*, man; *bae*, *ba*, low, deep; *cah*, damage; *car*, *gar*, high; *maen*, *men*, power; *na*, plain, high; *O*, high; *se*, *ce*, plain, &c. Very rare combinations are, *ner*, and *tar*, *ter*. Astarlos and Erro, with some other native writers, insist in affirming that every sound is significant; thus: *a*, male, expanded; *e*, female; *o*, round; *i*, sharp; *u*, hollow; *te* (pronounced almost as one single sound), superfluous, &c. In this attempt to reduce their language to a natural origin the Basques are surpassed by Davies and Owen, who carry their assertions and phonologies to much greater extent with regard to the Celtic languages. Erro has constructed an *Alfabeto de la lengua primitiva*, which he asserts to be of Iberian origin. But, as far as it can be hitherto ascertained from coins and ancient inscriptions, there existed a Turdetan (Iberian) alphabet, differing from it, and a Celtiberian containing Phœnician letters. Velasquez gives us a third one, the Bastulo-Phœnician. There are, beside these two, some other varieties. We possess the most valuable grammatic information in the Vizcayan, the best lexical development in the Guipuzcoan (Larramendi's *Diccionario trilingüe, Castellano, Bascuence, y Latin*, San Sebastian, 1858), but scarcely any thing available in the Labortan dialect. William von Humboldt (in Adelung's *Mithridates*, and in his work on the aborigines of Spain, &c., Berlin, 1821), and Prince Louis Bonaparte, furnish the best materials among all foreign writers on the Basque language. See also Ticknor's "Spanish Literature," vol. iii. p. 857, and *Le pays Basque, sa population, sa langue, ses mœurs, sa littérature, et sa musique*, par Francisque Michel, Paris, 1857.

BAS-RHIN (Lower Rhine), a department in the E. part of France, contiguous to that of Haut-Rhin (upper Rhine); area, 1,777 sq. m.; pop. in 1856, 568,855. The Vosges mountains bound it on the W., the Rhine on the E. separates it from Baden, and on the N. the Lauter divides it from Rhenish Bavaria. The department is divided into the arrondissements of Strasbourg, Saverne, Schélestadt, and Wissembourg. One-third of the surface is covered with forests. The remainder is well cultivated, and produces abundance of corn, wine, tobacco, beet-root, and hemp. There are numerous coal and iron mines, and commerce is greatly facilitated by several canals, and by the Strasbourg and Basel railway. Capital, Strasbourg.

BASS, in music. See **BASE**.

BASS (*labrax*), a family of sea and fresh water fish, of which there are many well-known varieties in American waters. They belong to the division *acanthopterygii*, or those having spinous fins, to the family of the *percide*, or those of the perch type, and have several subgenera, as *grystes* and *centrarchus*, which are the most remarkable. Bass of various kinds are found in most of the waters of the world, and are everywhere well esteemed, both as a table fish and by the angler. The principal

European variety is the *labrax lupus*, which has, by some writers, been confounded with our striped bass, first distinguished by the late Dr. Mitchill, of New York, though it is an entirely different fish. The American varieties are: I. The sea bass, sometimes called blue or black bass (*centropristis nigricans*). This is purely a sea species, never coming into fresh water. His general color is blue-black, slightly bronzed. The edges of all the scales are of a darker color than the ground, which gives it the appearance of being covered by a black net-work. The fins, except the pectoral, are pale blue, the anal and dorsal spotted with a darker shade of the same color. The teeth are set, like those of a carding machine, over all the bones of the mouth, those on the lips the largest. The dorsal fin has 10 spines, 11 soft rays; the pectorals, 18 soft rays; the ventrals, 1 spine, 5 soft rays; the anal, 8 spines, 7 soft rays; the caudal is trilobial and has 18 soft rays. The weight of the sea bass varies from $\frac{1}{2}$ pound to 17 pounds, the latter weight very rare. II. The striped bass (*L. lineatus*). This is the rock fish of the Delaware. His color is bluish brown above, silvery white below, with from 7 to 9 equidistant, dark, parallel stripes of chocolate brown, those above the lateral line terminating at the base of the caudal fin, those below it fading away above the anal fin. The teeth are numerous on the palatic and maxillary bones, and on the tongue. The 1st dorsal fin has 9 spines; the 2d, 1 spine, 12 soft rays; the pectorals, 16 soft rays; the ventrals, 1 spine, 5 soft rays; the anal, 8 spines, 11 soft rays; the caudal, which is deeply lunated, has 17 soft rays. This is an anadromous fish. It winters in the deep, warm, muddy sea bays, and runs up the rivers in the spring of the year, in pursuit of the smelt, and to devour the shad-roe; and in the autumn, to spawn itself. It runs from the size of a smelt up to 50, 60, and 70 pounds' weight. It is a most voracious fish, excellent on the table, and an especial favorite of the angler. III. The bar-fish (*L. notatus*), a variety of the fish above described, distinguished from it by Lieut. Col. Smith, of the British army. The principal distinction is that the lines on the sides are not continuous, but are broken into spots. IV. The ruddy bass (*L. rufus*). V. The little white bass (*L. pallidus*). These are 2 small and insignificant varieties, not exceeding a few inches in length, known to anglers in the vicinity of New York, where they abound, at about the meeting of the fresh water and the tide, as the river perch and the white perch.—We now come to the purely fresh water species, which are as follows: VI. The black bass of the lakes (*grystes nigricans*). His color is blue-black, glossed with bronze, and marked with darker clouded bandings; belly, lighter colored. Both jaws are armed with a broad patch of small, sharp, recurved teeth; the vomer has also a patch, and the palatic bones a belt or band of teeth of the same description. The dorsal fin has 9 spines; the 2d dorsal, 1 spine, 14 soft

rays; the pectorals, 18 soft rays; the ventrals, 1 spine, 12 soft rays; the caudal, 16 soft rays. He is found everywhere west, from the basin of the St. Lawrence to the tributaries of the Ohio. He runs from a few inches in length to rarely 8 pounds' weight. He is a bold biter and an excellent fish. VII. The Oswego bass (*grystes megastoma*). This fish is often confounded with the species last described, but is entirely distinct. Its principal feature is the great size of its mouth. It is a thicker fish, and its head is larger as compared to its size. Color, dark greenish blue, lighter on the belly. The dorsal fin has 9 spines, 14 soft rays; the pectorals, 18 soft rays; ventrals, 1 spine, 5 soft rays; anal 8 spines, 11 soft rays; caudal, 20 soft rays. It abounds in the bays and river-mouths of Lake Erie, bites well at live or dead minnow, and is a good fish, but inferior to the last-described variety. VIII. White bass (*L. multilineatus*), sometimes called white perch. This fish is peculiar to Lake Erie and the upper lakes, and is very abundant in them. In color it is light olive above and silvery white on the sides and belly, with numerous longitudinal dark lines, the numbers varying in different specimens. This fish, unfortunately, has not been scientifically described, so that its dental system and that of its fin rays cannot be given with accuracy. It is said to be an excellent fish on the table, and a bold, voracious biter. IX. The grass bass (*centrarchus hexacanthus*), sometimes called the roach. Also peculiar to Lake Erie, where it is abundant in the small bays and at the river mouths. In color it is spotted, or marbled, above, with dark shades on a sea-green ground, and on the sides with the same marks on light green or yellow. The sides of the head and body are of an iridescent white, the belly silvery white. Like the preceding fish, it has not been scientifically distinguished or described. Its anal fin is said to be extremely long, and its abdomen, consequently, very small. Wherever the large-mouthed bass is found this fish is plentiful. It rarely exceeds 10 inches in length and 2 pounds in weight. X. The rock bass (*centrarchus ancus*). In color, dark coppery yellow, banded with irregular darker clouds and green reflections. Fins, bluish green; teeth, small, recurved, on the maxillaries, vomer, palatines, and pharyngeals. The dorsal fin has 11 spines, 12 soft rays; the pectorals, 14 soft rays; the ventrals, 1 spine, 5 soft rays; the anal, 6 spines, 11 soft rays; the caudal, 17 rays. This fish, originally peculiar to the basin of the St. Lawrence, has come down the Erie canal and become common in the Hudson river, where it is freely taken. It rarely exceeds a pound in weight, but is an excellent fish on the table, and affords admirable sport to the angler. XI. The growler (*grystes salmonoides*), generally called the white salmon in the southern states. It closely resembles the black bass in form, but grows larger. It is of a deep bluish green above, lighter below; when young has 25 or 30 longitudinal dark bands, which grow paler by

age. The dorsal fin has 10 spines, 14 soft rays; the pectorals, 16 soft rays; the ventrals, 1 spine, 5 soft rays; the anal, 8 spines, 12 soft rays; the caudal, 17 soft rays. This, also, is said to be a bold biter and good fish, and, with this species, ends, so far as is yet ascertained, the list of the bass family, proper to American waters, although it is probable that, in the course of time, future varieties may be discovered in the vast network of lakes and rivers which has not yet been scientifically explored through one-fourth of their extent.

BASS or BARK-WOOD, is the American name of the German *Linde*, linden, or lime tree also called teil tree, from the Latin *tilia* (Gr. *ῥίλη*, light bodies floating in the air, and *πτερόν*, feather), all denoting a property of the tree; for its bast or bass is employed for its fibres, and its wood is light and soft (German, *lind*, *gelind*, mild). The *tilia* forms the noblest of more than 80 genera of the family *tiliaceae* of Endlicher's class *columnifera*; and of the *polyandria monogynia* of Linnaeus. Most of its congeners grow within the tropics, while it inhabits the temperate regions of Europe, Asia, and North America. Its generic characters are: leaves alternata, with deciduous stipules; flowers axillary with 4 or 5 sepals and as many petals, with glands or scales at the base; stamens numerous; styles united, but stigmas distinct; fruit dry, berrylike, or a drupe attached to a broad membranaceous wing, with several cells (or one by abortion); seeds numerous in a cell (or one abortively). Two groups of species are generally received, the European and the American, each containing a variable number, according to different botanists; for what some contend to be species, others consider as mere varieties of each group, owing to the indistinctness of the limit between them. About 10 species may be safely admitted. *T. Europaea* has large cordate leaves, stamens in 5 parcels, a sessile, globular, villous ovary. It blossoms in June and yields excellent material to the honey bees which, attracted by the fragrance, flock thither in great numbers and are often waylaid by bee-hunters. The most renowned honey is gathered in Lithuania, where there are many linden-forests, especially near Kovno. The dry flowers are often used in the manner of tea, in colds and spasmodic affections, being even believed to be anti-epileptic. The small-leaved and great-leaved European species contain more viscid sap than others, which is applied to bruises and wounds, being somewhat astringent. The silvery linden is a beautiful species of Hungary and European Turkey. The fruit has been tried as a substitute for chocolate; the foliage is successfully employed as food for cattle. The tree can be easily propagated by seeds or by layers, and is of very rapid growth, especially in loose, loamy or alluvial soil, as it prefers plains and moist meadows or banks of lakes to hilly situations. Its ample compact head of handsome foliage, together with its height and breadth, have made it a fa-

vorite ornamental and shade tree in Europe. Prominent among the remarkable lindens are, that at Freyburg, in Switzerland, planted immediately after the victory at Morat, over Charles the Bold, 1476; a much older one not far from the same town;—that of a town in Württemberg, hence called *Neustadt an der Linde*, 100 feet high, whose branches extend nearly 100 feet from the centre, being supported by 108 pillars; and one at Knowles, near London, extending over nearly $\frac{1}{2}$ of an acre, and surrounded by many circles of progeny grown up from the branches rooting in the soil, about 200 years old.—Out of linden-bast are made (especially after being soaked in water, and separated from the outer bark) strips for tying plants and other things, nets for fishing (in Sweden), cloth for shepherds (in Carniola), the upper part of shoes (by peasants in Russia, who apply the unprepared bark as soles), fine baskets, ropes, mats (especially in Russia and Sweden). The whole bark is used also for coverings of all sorts, for roofs of cottages, and for baskets. The wood being close-grained, light, white, tough, pliable, resilient, not liable to warp, is employed in many ways, viz.: for bottoms of chairs, wainscoting, carved ends of stairs, carriage panels, sounding-boards in piano-fortes; it is turned into toys, boxes, carved into spoons and other vessels (hence spoon-wood), into statues of saints, figure-heads of ships, &c., and is sawed into planks for various purposes. Among the finest carvings in this wood are those at Windsor castle, in the Trinity college at Cambridge, at Chatsworth, &c. Linden charcoal is held to be almost equal to that of the hazel for making gunpowder, and is preferred to that of the alder. — *T. Americana*, called *lenni* and *wikby* by the aborigines, is distinguished from the European by the epithet *nigra*, on account of the dark brown color of its bark; although there are species not falling under this category. One, indeed, called *alba*, grows on the Ohio to the height of 80 feet. Other species are the *pubescens* and *leptophylla*. In general, the whole group does not differ essentially from the European, but the finest tree of this continent does not equal the finest of Europe. Many grow on the shores of lakes Erie and Ontario; others along the sea-shore in Maryland, Virginia, and Carolina. See BAST.

BASS-RELIEF. See BASSO RILIEVO.

BASS ROCK, just at the mouth of the Frith of Forth, about 8 miles N. E. of North Berwick, is about 1 mile in circumference, and is of greenstone and trap. Through its entire diameter is a subterranean or rather subpetran passage from N. W. to S. E. There are about 7 acres of grass plot on its surface, with an elevation of 420 feet above the sea. On it are also the ruins of a castle. In the reign of Charles II. this rock was purchased by him, and used as a state prison for confining the Covenanters. It was taken possession of by a body of the adherents of James II. and was the last place to yield to William. It is accessible

to vessels only on the southern side, and even there only one person can ascend the shelving precipice at a time. The soland geese frequent this rock at particular seasons, and large numbers of the birds and eggs are taken to the mainland for market. This renders the rock valuable as property. It is owned at present by Sir Henry Dalrymple Hamilton, of North Berwick, and is farmed for a considerable rent.

BASS'S STRAITS, so named from the discoverer, George Bass, and separating Van Diemen's Land from New South Wales. Until 1797, Van Diemen's Land was supposed to be a part of the large continent of Australia. These straits are about 250 miles long, and 140 wide. At their eastern entrance stands Flinders's island, and at the western, King's island. They abound in small islands and coral reefs, which materially obstruct the navigation.

BASS, GEORGE A., surgeon in the English navy, who distinguished himself by his discoveries in New South Wales and Van Diemen's Land. Bass was sent out by the English government with Gov. Hunter, to New South Wales, a few years after the formation of the colony. He and Midshipman Flinders made their first 2 voyages of discovery on the coast of New South Wales in a boat only 8 feet long, which they very appropriately called the "Tom Thumb." The following year (1797) the government despatched Bass on a 3d voyage of discovery. On this occasion he discovered the straits that bear his name, between Van Diemen's Land and New South Wales, and so it was settled that these two portions of land were not united. In 1798 he was sent again, with Flinders, with directions to sail around Van Diemen's Land, and examine and project the coast. The result greatly increased the progress of colonization in that country. Bass was an ardent and daring adventurer. He attempted in 1796 what was not accomplished until 17 years later, and then not by himself, namely, to find a pass through the mountains which separate the coast land from the interior of New South Wales.

BASSA, PEDRO HOLASCO, a Spanish general, born at Reus, in Catalonia, in 1790, died July 27, 1835. He was among the first to rouse the population of Catalonia to arms against the Bonapartists. After the restoration he received a commission. He was unfavorable to the government proceedings in 1820, but he defended the constitution until he was forced to surrender by the French at Tarragona, in 1823. In the reorganization of the army he was made a colonel by Ferdinand VII. In 1833 he was appointed military commandant of Cadiz, and in 1834 he was sent to Barcelona as governor of the city. In 1835 a bull-fight took place, and a concourse of spectators, not less than 20,000, were gathered into the amphitheatre. The bulls were tame and spiritless, and their bad performance gave such dissatisfaction to the enthusiastic amateurs of the national spectacle, that, with loud imprecations on the niggard spirit of the authorities, the

more energetic commenced a riot. Speedily the riot grew into an insurrection. The disaffected seized the opportunity to swell the uproar, and a cry was raised against the monks. The convents were attacked, and bands of robbers raged through the city. On July 27, the captain-general, unable to appease the tumult, called in the aid of Gen. Bassa, who marched into the city with 2,000 men, and occupied the palace threatened by the people. By some neglect of discipline a mob of sailors and low women were permitted to make their way into the palace. They seized Bassa, dragged him to the balcony, murdered him, and threw his body into the street, whence it was dragged along the pavement into the Rambla, and there burnt with a quantity of unpopular government proclamations.

BASSANO, a city of about 10,000 inhabitants in the Austrian kingdom of Venetian Lombardy, in the delegation of Vicenza, situate on the river Brenta, over which there is a beautiful stone bridge 182 feet in length which connects Bassano with the extensive suburb Vicentino. The city is surrounded with walls, and has 6 gates, one of which, built by Palladio, is much admired. The side-walks are of marble from the adjacent mountains, and the streets are paved with granite, porphyry, schist, and lava, which abound in the environs. Bassano possesses an ancient castle fortified by the tyrant Ezzelino, extensive barracks, and 4 nunneries. The printing establishment of Ramondini was once one of the first in Italy, keeping 50 presses at work, and giving employment to 1,000 men; it has lost much of its ancient prosperity, but is still an establishment of considerable importance. There are paper-mills attached to it, and an engraving department, which has produced Volpato and other eminent artists. Bassano has silk spinning mills, and wax bleacheries, cloth, copper ware, paper, and straw hat manufactories, and carries on an extensive trade. During the middle ages, indeed almost from its first existence to this day, the city has been in subjection to foreign powers. It was reserved for Napoleon to invest Bassano with historical fame, by the battle which, on Sept. 8, 1796, he gave near that city to the Austrian field-marshal Wurmser. Four battles between the French and Austrian army took place here on Nov. 6, 1796, Nov. 11, 1801, Nov. 5, 1805, and Oct. 31, 1818. In 1809, Bassano was raised to a duchy by Napoleon, and presented to the minister Maret, who was created duke of Bassano.

BASSANO, or **BASSAN**. I. **FRANCESCO DA PONTE**, the head of a family and school of painters, called the Bassans, after the town of Bassano, where Francesco, who was born in 1475, died in 1530. He had studied in Venice under Giovanni Bellini, but his frescoes were a great improvement upon the dry manner of his master. His best composition is a "Descent of the Holy Ghost," in a church at the village of Oliero, near Bassano. Francesco was not only eminent as an artist, but was also a man of fine literary and

scholastic tastes. He is frequently called the elder Bassano, to distinguish him from his son. II. **GIACOMO DA PONTE**, commonly called **IL BASSANO**, son of the preceding, the most celebrated member of the Bassano family, born at Bassano in 1510, and died at Venice in 1592. He studied under his father, and at Venice he attended the instructions of Bonifacio Veneziano, but derived his principal educational advantages in designing from the cartoons of Parmiggiano, and in copying the pictures of Bonifazio and Titian. His picture of the "Nativity," in the church of St. Giuseppe at Bassano, is his masterpiece, and, in fact, in force of colors and the *chiaro-scuro*, is one of the greatest achievements of modern painting. III. **FRANCESCO**, called the younger, son of the preceding, born 1548, died 1591, was employed with Tintoretto in the palace of St. Mark, and executed there several frescoes after the designs of Paul Veronese. His best works are the fresco ceiling of the palace of the doges at Venice, representing the capture of Pavia.

BASSANO, **HUGHES BERNARD MARY**, duke of a minister of Napoleon I., born at Dijon May 1, 1763, died at Paris, May 13, 1839. He studied military engineering and afterward law. In 1789 he published at Versailles a current report of the proceedings of the constituent assembly, which was afterward merged in the *Moniteur*. In 1791 he was one of the founders of the Feuillants club at Paris. After Aug. 15, 1793, he entered the foreign office, and was sent on a diplomatic mission to England, and afterward to Naples. In 1793, the Austrians imprisoned him at Mantua, and in the Tyrol. Subsequently he was of great service to Napoleon in the revolution of the 18th Brumaire, and was made secretary general of the consular government. In 1811 he became minister of foreign affairs, and received the title of duke. After the abdication of Fontainebleau, he remained faithful to Napoleon, and refused to act with the provisional government after Waterloo. Under the restoration, he left France for several years. Louis Philippe made him a peer in 1831, and minister of the interior in 1834. For 8 days he was even prime minister. He left the reputation of an honest man.

BASSANTIN, or **BASSANTOUN**, **JAMES**, a Scotch astronomer, born in 1504, died in 1566. He was professor of mathematics in the university of Paris, but his name would be forgotten if he had not been, in his time, reputed a successful astrologer. It was reported that, more than 20 years before the death of Mary of Scotland, he foretold her destiny.

BASSAS DA INDIA, an island in the Zambeque channel, of circular shape, and about 4 miles in diameter. The Portuguese discoverers called it *Baxos da India*, and this name still bears in all charts except the English.

BASSEIN, a seaport town of British India in the district of Concan, Bombay presidency. It was captured by the Portuguese in 1510.

wrested from them by the Mahrattas in 1750, and on the treaty of peace with the natives in 1802 passed into British possession.

BASSELIN, OLIVIER, a working man and a poet, born at Val-de-Vire, in Normandy, France, about the middle of the 14th century, and died about 1418. He was a fuller, and this branch of industry is still carried on at his native village. The incidents of his life are buried in oblivion. His forte lay in the composition of drinking songs. These songs were first called *Vaux-de-Vire*, from the place of their origin. Hence the modern French word *caudeville*. After existing orally for a long time, Jean le Houx, a Norman, had them printed about 1576. Basselin is one of the earliest writers of French songs, and on that account alone, is interesting to the student of French literary history.

BASSERMANN, FRIEDRICH DANIEL, a German publicist, born at Mannheim, in 1811, died by his own hand July 29, 1855. He began life in commerce, then studied at Heidelberg, and served in the legislature of Baden, and in the Frankfort parliament of 1848. In both these bodies he was a decided conservative. In 1850 he was attacked by a nervous disease, and killed himself to escape the suffering it caused him.

BASSES, GREAT and LITTLE, the names given to 2 ledges of rocks in the bay of Bengal. Little Bases is the more dangerous group.

BASSES-PYRÉNÉES (Lower Pyrénées), a frontier department of France, bounded N. by the department of Landes and Gers, E. by the department of Hautes-Pyrénées, S. by the Pyrénées, and W. by the bay of Biscay; area, 2,862 sq. m.; pop. in 1856, 436,442. It comprises the arrondissements of Bayonne, Mauléon, Oléron, Orthez, and Pau. About $\frac{1}{2}$ the surface is covered with pastures and marshes; forests occupy $\frac{1}{3}$; the rest is fertile. The mountains give birth to numerous torrents, the principal of which are the Gave-de-Pau, the Gave-d'Oléron, and the Nive. The mineral springs of Eaux-Bonnes and Eaux-Chaudes are much resorted to, and the springs of Salies yield excellent salt. Iron forging and linen and paper making are almost the only manufactures. The capital is Pau.

BASSET, a name given by miners to the outcropping edges of strata. Upon the slopes of hills within which the strata lie inclined to the horizon, these edges assume the greatest varieties of outline, as they appear at different levels and upon the different sections, along which they may be exposed. Seen in a vertical section on the strike of the strata the basset edges are horizontal, however steep the dip. They show the true dip only when the section is upon its line.

BASSE-TERRE, the French term for low and. It is applied to 2 districts and 3 towns. I. The southern portion of the island of St. Christopher, one of the British Antilles. It is a very beautiful and well-cultivated district. II. The western division of the island of Guadeloupe, one of the French West Indies. The western division is separated from the eastern

by a small creek connecting 2 bays in the north and south. The western division is remarkable for its atmospheric humidity. III. The capital of the island of St. Christopher, which is situated in the district of Basse-terre, and on the southern coast of the island, at the mouth of a small river. It is a well-built town containing a large open square in the centre, and protected by 3 forts. The trade of the town is considerable. The coast is not adapted for commerce. A sandy beach prevents both the erection of quays and the near approach of laden vessels. The freight is loaded and unloaded from a kind of lighter called a "Moses," which is thrown up broadside to land, on the sandy beach, in the lull of the surf. A light-house was erected on this coast in 1846. IV. The capital of the French island of Guadeloupe, in the West Indies. It is a seaport, and is situated in the western division of the island and on its south-western coast. It is especially remarkable, as is the entire western division of the island, for the humidity of its atmosphere. The annual average of rain falling from the middle of July to the middle of October is 86 inches. The climate is warm, rising frequently to 130° F., but its average is about 81° F. Basse-terre has been the capital of the island since 1848, when the former capital, Point-à-Pitre, situated in the eastern division, was destroyed by an earthquake. Basse-terre is the residence of the governor of the French colony of Guadeloupe, and is the principal seat of commerce for the island, on account of its proximity to the producing portion of the country, in spite of the deficiency of a protected harbor, for which it has only an exposed roadstead. The harbor of the former capital is much better than that of Basse-terre. V. The capital of the nearly circular island of Marie-Galante, lying in the Caribbean sea, 15 miles south of Guadeloupe.

BASSI, HUGH VISCONTI DE', born in the latter part of the 14th century, the natural son of a Sardinian gentleman, who owned more than $\frac{1}{2}$ of the whole island of Sardinia, beside other estates. On the death of his father, Bassi was refused his inheritance by the Pisans on account of his illegitimacy. This so enraged him against the inhabitants of Pisa, that he revenged himself by getting in his power a body of Pisan soldiers, under pretence of defending the island, when he treacherously obtained their massacre, and afterward surrendered the island to James II., king of Aragon.

BASSI, LAURA MARIA CATERINA, a distinguished scholar, born at Bologna, Oct. 31, 1711, died Feb. 20, 1778. At the age of 21, she sustained successfully in public a philosophical thesis in Latin against 7 professors. This novel exhibition occurred April 17, 1732, and the following May, she received the degree of doctor in philosophy, while the same year the senate conferred upon her a chair of philosophy, with privilege to lecture. She afterward studied physics, algebra, and geometry, with great success. Her command of language was great, and

she was fully acquainted with the Greek, Latin, and modern tongues. A volume of poems, written in her praise, was published during her life, and a medal struck in her honor.

BASSOMPIERRE, **FRANÇOIS DE**, a brilliant French courtier, born at the chateau of Harouel, in Lorraine, April 12, 1579, died Oct. 12, 1646. Born in the ranks of the highest nobility, and endowed with great personal advantages, he was received with open arms at the court of Henry IV., and pushing his fortunes by courting the favor of the ladies, and by making himself agreeable to fashionable society, he gradually succeeded in ingratiating himself with the king, who appointed him member of the council and commandant of a regiment. Subsequently he became captain-general of the Swiss guards. After Henry's assassination, he maintained his position at the court, first by playing into the hands of Maria de' Medici, the regent, and afterward, when Louis XIII. ascended the throne, by flattering the prejudices of the king, who promoted him in 1622 to the dignity of marshal of France, and employed him on various diplomatic missions in Spain, Switzerland, and Great Britain. On various occasions we find him also taking a part in military operations. He assisted at the siege of Rochelle, and in the province of Languedoc he acted against the Huguenots. His versatile career was brought to a sudden close by Richelieu, to whom he had given umbrage, and who caused him to be arrested. He was a prisoner in the Bastille from 1631 until the cardinal's death, in 1642, when he recovered his liberty, and, at the same time, his position. The long imprisonment, however, had broken the elasticity of his spirit, and he died a few years afterward. To rehearse all the love affairs and political intrigues in which Bassompierre was engaged, would be to give a chapter of French history of the 16th and 17th centuries. They may be gathered from the memoirs of his life, which he wrote while in the Bastille, and which were first published at Cologne, in 1665, in 2 vols., and afterward in 1723, at Amsterdam, in 4 vols. The favor which he enjoyed with the ladies of France, may be inferred from the fact that, previous to his arrest, he was reported to have consigned to the flames more than 6,000 love-letters. One lady, who bore him a son, spent 8 years in lawsuits for the purpose of forcing him to marry her. But he was already secretly married to another lady of high rank, the princess of Conti, Louise de Lorraine, who died of grief when she heard of his death. He was a fascinating and accomplished man, but reckless and unprincipled, without regard for womanly character, and destitute of a sense of honor in pecuniary obligations.

BASSOON, a musical wind instrument made of wood, in the shape of a long tube, which is played by means of a reed through a bent brass mouth-piece. It is called by the Italians *fagotto*, because composed of two pieces of wood bound together like a fagot, and serves as the base to the clarinet and oboe, its tone being closely

assimilated to that of the latter. It has a compass of 3 octaves, from double B flat to B flat in alt, and from its sweet and plaintive tone, is an agreeable instrument in the orchestra, where, for many years, however, it occupied a very subordinate position. It was invented by Alfranio, a canon of Pavia, in 1539, and was first introduced into England by Handel, about the year 1720.

BASSORAH, **BABRA**, **BASSORA**, or **BASRAH**, an important town at the head of the Persian gulf, situated on the Euphrates, which, after its confluence with the Tigris, is locally called the Shat al Arab. It is about 70 miles from the mouth of the river. The town is spread over a considerable area, a great part of which is garden ground. It is mean, ill-built, and dirty. The inhabitants are composed of Turkish officials, Armenian merchants, and Arab working people. Bassorah is the entrepot for the commerce of India with Persia, and Turkey in Asia, by way of the Persian gulf. Silks, the precious metals, jewels, indigo, and shawls find their way into Persia in British and Arabian vessels. In the neighborhood there is a wall of several miles in length to repress the incursions of the Bedouins. The old town of Bassorah was founded in the 7th century by the caliph Omar, and during the early reigns of the Abbassides it was the second city of the Mohammedan empire. The constant wars on the Persian frontier have ruined its ancient importance and splendor. It is in the pashalic of Bagdad, and during the revolt of Mehemet Ali, fell temporarily into his power; but he surrendered it on his submission to the Porte. Pop. 25,000.

BASSO-RILIEVO, or **BASS-RILIEU**, a piece of sculpture where the figures do not stand out much above the plane on which they are formed. The term is frequently used for relief generally; *alto-rilievo* signifying the highest, *bas-rilievo*, the least elevation from the ground, and *mezzo-rilievo*, a moderate elevation.

BASSORIN, the medicinal principle of the Bassorah (Persian) gum, discovered by Vasselin. It also exists in gum tragacanth, and in some gum resins. It is a semi-transparent substance, difficult to pulverize, swells considerably in water, and forms a thick mucous. Strong nitric acid converts bassorin into murex and oxalic acids.

BASSVILLE, **NICOLAS JEAN HUGOT** is a French revolutionist, assassinated in Paris Jan. 13, 1793. He was a miscellaneous writer and during the revolution edited the *Mercure National*. In 1792, under the ministry of Le-mouriez, he was appointed secretary of legation to Naples; he was afterward sent to Rome and an attempt, made by order of the government, to publicly expose the republican constitution and standard in Rome, resulted in a riot, the progress of which, Bassville had his arm cut by a razor in the hands of a barber. The French government afterward adopted his plan and forced the papal power to pay 800,000 francs to be divided among the sufferers by this outrage.

BAST, or Bass, is the inner bark (*endophloeum*) of dicotyledonous plants, contiguous to the woody circle. It is the fibrous part of the bark, and consists of a tissue of cells, including the so-called laticiferous vessels. Less frequently it occurs in the pith and leaves of dicotyledonous, and in the stems and leaves of monocotyledonous vegetables. It originates out of the *camidium* (organizing tissue), and belongs to the vascular bundle. The bast cell grows long at the expense of the surrounding parenchyma, without producing new cells. The wood and bast cells of monocotyledonous plants are not easily distinguishable. There are none in the cryptogamous. For the plant itself, as well as for technical, medicinal, and other purposes, the bast cell is of the highest importance. For, unless it become changed into wood, it conducts sap; it serves to exchange and to alter the vegetable matters, being a sort of digestive organ; it produces nutritious, or poisonous, or medicative matters, and is largely used in the fabrication of cloth, ropea, mats, sacks, &c. The bast cells are disposed and developed variously in different plants; occurring in rows, wreaths, more or less spread bundles, or single within the parenchyma. In some plants bast is formed but once, in others every year. Some are simple, others branched; some primary, others secondary; some ever limber, others changing into wood. They are most developed toward the outside. While young, they contain a granular liquid, which disappears by the thickening of their walls. In the *chelidonium majus* this liquid remains as yellow milk. The laticiferous cells of the *epocymea*, *euphorbiacea*, *composita* (dandelion, ettuca, &c.), are developed just like the fibrous cells of flax. Young bast-cells, when treated by a solution of iodine and chloride of zinc, become pale blue, the older ones violet, the full-grown pink. Thickened cells are plainly stratified, and their walls often become contiguous by the disappearance of the cavity. The walls exhibit various designs, spiral or other lines, more or less constantly, according to the variety of the plants, and also to the treatment by alkali and acids. By such treatment, and by the microscope, the nature of the various fabrics made of bast may be determined. Thomson and Faur have thus demonstrated the sheets around Egyptian mummies to be of linen. The degree of decomposibility, of contraction, of twisting; the length, density, and form of the single cells of the bast, vary in different plants. They are very long in flax, hemp, in some nettles, urges, &c.; very short in cinchona. Cotton consists of long hairs, and not of bast-cells, which it very much resembles otherwise. The bast-cells of monocotyledonous plants are mostly lignified. The unlignified are very hygroscopic (water-attracting), contain often chlorophyll (the green matter of plants), and more frequently sort of milk, which is condensed into gum-stic, gutta-percha, opium, &c., substances out which art produces strychnine, nicotine,

and many other narcotic alkaloids. The lignified, on the contrary, conduct sap but a short time, become filled with air, and thus dead for the plant. No bast-cell has pits, but the *abietinea* have sieve pores or canals.—The uses of bast are manifold. Flax bast is soft, flexible, seldom with swellings; hemp bast is very long, stiffer and thicker than flax, more stratified; nettle (*urtica dioeca*) bast resembles cotton, has swellings, is thicker than hemp. Branched and lignified bast-cells of great beauty are found in the mangrove tree (*rhizophora mangle*), and the secondary ones of *abies pectinata*. Among the monocotyledonous bast fibres, those of the New Zealand flax (*phormium tenax*) are the most remarkable, being found in bundles near the margin of leaves. They resemble hemp, are very white, sometimes yellowish, very long, and containing much lignin, somewhat stiff, but very tough, and fit for stout ropes. In palms a highly developed body of lignified bast surrounds their vascular bundle, while particular bast bundles are found also in the bark, leaves, and interior of the stem. Of this, the husk of the cocoanut is an example. A similar disposition exists in the *dracena reflexa*, and in some *aroides*. Everybody knows the tenacity of the bast of the lime tree, which is hence called bass-wood. The Chinese grass cloth is made of *bahmeria puya*. Manila hemp comes from the *musa textilis*; rice bags are made in East India from *antiaris saccidora*. The Latin name of bast, *liber*, has been applied to designate book, from the use of bast in ancient times for writing on. Our word book also means, originally, beech (*fagus*), from the same use of its bast before the invention of other materials.

BASTAN, a valley of Spain, in the province of Navarre, near the frontier of France, on the southern slope of the Pyrénées mountains. The valley is about 25 miles from north to south and 10 miles from east to west, is encircled by lofty heights, and watered by several streams which are the affluents of the Bidassoa. The inhabitants, about 8,000 in number, speak the Basque language, and have been distinguished for their valor since the 18th century, when they fought so gallantly at the battle of Las Navas de Tolosa that their king pronounced every man of Bastan a hidalgo or gentleman. They are all soldiers, and once in 8 years they assemble and hold a general military review. They meet also every 8 years to select 3 persons, of whom the viceroy of Navarre appoints one to be the alcalde of the valley. There are 13 villages beside the capital town Elizondo. The valley produces wheat, Indian corn, flax, chestnuts, and various other fruits in abundance. Its pastures and forests are held in common, and its principal wealth is in cattle. Here in 1794 the French general Moncey defeated the Spaniards.

BASTARD (old Eng. *bastard*, Saxon, *bas*, low or spurious, and *steort*, sprung), a person born without lawful parentage. By the English law a child born after marriage, whatever may be

the time, is legitimate, unless non-access of the husband, who is otherwise presumed to be the father, can be proved. Birth of a child after the death of the husband, if within a possible period of gestation commencing from a time anterior to such decease, is also held to be legitimate, and this period has in some instances been allowed of an extravagant extent, but is now, in accordance with the opinion of medical writers as to the limit of any accidental variation from the accustomed course, fixed at 10 months. To avoid any question which might arise in cases of 2d marriage by the widow soon after the death of the husband, it was a rule of the civil law that she should be prohibited from marrying *infra annum luctus*, within the year of mourning, which, according to the ancient Roman calendar, was 10 months, and the same rule was adopted by the Saxons and Danes, except that the year was 12 months. By the civil and canon law the intermarriage of the parents after the birth of a child rendered such child legitimate, and this is the law of Scotland, France, Holland, and Germany. The ecclesiastics urged the parliament of Merton in the reign of Henry III. to adopt this rule of the canon law, but the response of the barons and knights was unanimous, *quod nolunt leges Anglia mutare*; and the humane provision, which was rejected at that term probably from prejudice against foreign laws and the encroachments of the clergy, who administered the canon law, has ever since been excluded. The legal incidents of illegitimacy by the common law of England relate chiefly to succession or inheritance. A bastard being held to be *nullius filius*, cannot take real or personal estate as the heir of either parent, nor has he even the name of the father or mother, but may assume it or any other name, and is known in law only by such assumed or reputed name. He is, however, entitled to take real or personal estate by will or other conveyance, and to dispose of the same in a similar manner; but only his children can inherit, and in case he dies intestate without children his real estate escheats to the crown, and his personal estate is disposed of by administration for the benefit of the crown or its grantee. The father at common law was not bound to provide for a bastard child, but by the statutes commonly called the poor laws, provision is made for compelling the father to give security for the maintenance of a child, so as to prevent its becoming a charge upon the parish. In the United States important modifications have been made in respect to the rights of illegitimate children. In many of the states a bastard may take by inheritance as heir or next of kin of the mother, so the mother may inherit from her illegitimate child, but with one or two exceptions, the common law rule provides that the intermarriage of the putative father and mother does not legitimate a child born before the marriage. In the state of New York an illegitimate child cannot inherit to any person but the mother, or, in case of her decease, the relatives on the part of the

mother inherit to an illegitimate child. The provisions of the English statutes in respect to compelling the father to give security for the maintenance of a child have been generally adopted in this country, the object being, however, only to indemnify the town or county from the charge of the child as a pauper. By the civil law a distinction was made between children by concubinage (*nothi*) and children of prostitutes (*spurii*): the former were lawful heirs of the mother, and were also entitled to be supported by the father; the latter had no legal right either of inheritance or to a support.

BASTARNÆ, a people who originally inhabited that part of Sarmatia which bordered on Germany and the Baltic. They subsequently emigrated toward the S. E., and settled between the Dniester and Borysthene, near the mouths of the Danube. They may have been a branch of the Cimir.

BASTIA, formerly the chief city of the island of Corsica, pop. 12,500. It is built in the shape of an amphitheatre, on a mountain has narrow angular streets, and is defended by some recently erected forts. The inhabitants carry on a trade in skins, wine oil, figs and pulse, and in stilettoes and daggers, which are exported to Italy. Bastia was founded in 1581 by the Genoese, Lionel Lomellino. In 1768 the English took it, but were compelled to surrender it in the following year. In 1793 successfully defended itself against the Austrians and the Piedmontese. After the union of Corsica with France, in 1768, the English held it again for a short time. In the first division of the French sovereignty into departments, Bastia was named the capital of the department of Corsica, but was obliged to surrender that honor soon afterward to Ajaccio.

BASTIAT, FREDERIC, a French economist born at Bayonne, June 29, 1801, died at Paris, Dec. 24, 1850. He was educated for commercial pursuits, and entered a mercantile house in his native town, but the bent of his mind was toward political economy; and a large inheritance left him by his grandfather in 1825 enabled him to devote himself to that study. He early gained a reputation among his neighbors for ability and uprightness. In 1840 he travelled through Portugal and Spain; in 1841 made his first appearance as a writer in a article attacking the protective system, published in the *Journal des économistes*, which attracted general attention; in 1845 he visited England and made the acquaintance of the Manchester school, one fruit of which was a work entitled *Cobden et la ligue, ou l'agitation Anglaise pour la liberté des échanges* (1 vol. 8vo, Paris, 1846). In 1846 he took an active part in the establishment at Bordeaux and at Paris of a free-trade association, becoming its Parisian secretary, and the chief editor of the journal which it produced, called *Le libre échange*. He was thus contending against the protective tariff when he also came forward as one of the ablest and most fertile opponents of the socialists of the

country, whose idea of the omnipotence of the state he combated with remarkable keenness and cogency. In 1848 he was chosen a member of the constituent and then of the legislative assembly, but his health, never very strong, did not allow him to appear at the tribune. He developed, however, a more remarkable activity as a writer, and gained a universal reputation by his controversies with the celebrated Proudhon, who met with no other antagonist half so formidable. His labors during this eventful period entirely exhausted the vital forces; consumption made its appearance, and his physicians ordered him to Italy, in Sept. 1850, where, after 3 months, he died.—He was a writer of great point, pungency, and clearness. Among his most striking works are, perhaps, the pamphlet *Capital et rente* and the *Gratuité du crédit* (Paris, 1849), containing the discussion of the questions raised by Proudhon. But by far the most important of his works is the *Harmonies économiques*, left incomplete at his death. It is an attempt to demonstrate that the laws of economy all tend concurrently and harmoniously to the progressive amelioration of human life. From this point of view there is no real antagonism in society, but the interests of all classes and individuals are essentially congruous and mutually dependent. This work was the occasion of a prolonged controversy between M. Bastiat and his friends and Mr. Henry C. Carey of Philadelphia, who contended that the principle of economical harmony was a discovery of his own, and had been first set forth in his "Principles of Political Economy" (8 vols., Phila., 1837-'40). This discussion was conducted in the pages of the *Paris Journal des Économistes*, and justly excited much attention.

BASTIDE, JULES, a French statesman, minister of foreign affairs for the French republic under Gen. Cavaignac, born at Paris, Nov. 21, 1800. Early a democrat, he could never cease to labor for the downfall of the Bourbon monarchy. He fought hard in the revolution of July, 1830. He was also opposed to the Orleans monarchy. Condemned to death for his share in the insurrection of June 5, 1832, he escaped from prison and fled to England, where he resided 2 years. He returned in 1834, and was acquitted. After the death of Armand Carrel he became chief editor of the *National* newspaper. This place he resigned in 1846, and founded the *Revue Nationale* in 1847. He rendered great assistance to Lamartine in the office of the ministry of foreign affairs, and was elected to the constituent assembly for 3 departments. He chose the Seine and Marne. He was minister for foreign affairs from May 10 to Dec. 20, 1848.

BASTILE, the state prison and citadel of Paris, built in 1669, in order to protect the palace of Charles V. against the incursions of the Burgundians, and destroyed by the mob in the beginning of the revolution, in 1789, after an existence of 20 years above 4 centuries.

The architectural plan of the Bastile is not now easy to be ascertained, nor, if it were, would it be of any avail; since, having received additions by every successive monarch, it had no regular design, of any period, much less one in the least accordant with any present system of fortification. It had, however, as its principal feature, eight huge round towers, connected by curtains of massive masonry, and was encircled by a ditch of 125 feet in width, which was dry, except after great overflows of the Seine or unusually heavy rains. This ditch was, exteriorly, surrounded by a wall of 60 feet in height, to which was attached a wooden gallery, rising in successive stages, and running around the whole inner circumference of the ditch, opposite to the castle. This was called "the rounds." Two staircases gave access to these rounds, from the right and left, directly in front of the main guard, and sentinels were regularly posted in them, whose duty it was to be perpetually in motion watching the windows, in order to discover the first movement of the prisoners toward escape. Within the body of the castle a sentry struck a bell every hour, day and night, to show that he was on the watch; beside this, during the night, a bell was struck hourly in the rounds. The administration of the Bastile was vested in a governor, a royal intendant, a major, a major's aid, a surgeon, and a matron. The garrison was composed of 100 men, commanded by two captains, a lieutenant, and sergeants. The lieutenant-general of police in Paris was the sub-delegate of the minister for the department of the Bastile, and he had, under his orders, an official commissioner, called the commissioner for the Bastile. So soon as a prisoner was brought to the Bastile he was inventoried, his trunks, clothes, linen, and pockets were all examined, in order to discover whether there were any papers bearing relation to the causes of his arrest. "The new-comer," says the advocate Linguet, who was himself detained 8 years in the Bastile by Maupeau, "is as much surprised as alarmed to find himself subjected to the search and personal examination of 4 men, whose appearance seems to belie their functions; men clad in a uniform which leads one to look for a regard to decencies, and wearing decorations which presuppose a service which endures no stain. These men take from him his money, that he may have no means of corrupting any one of their number; his jewelry on the same consideration; his papers, for fear he should find any resource against the tedium to which he is henceforth devoted; and his knives and scissors, for fear he should commit suicide, or assassinate his gaolers." After this examination, he was led to the cell intended for his occupation. These cells were situated in all the towers, the walls of which were, at least, 12 feet in thickness, and at the base 80 or 40. Each had an aperture worked in the wall, defended by 8 iron gratings, one within, a second without, and a third in the mid thick-

ness of the masonry. The bars of these gratings were an inch in thickness, and, by a refinement of cruelty, the solid parts of each grating were made to correspond with the apertures of another, so that although the openings in each grating were really of 4 inches, only 2 inches were left unobstructed. In winter these cells were ice-houses; in summer, damp stoves, for the walls were so thick that the heat was never sufficient to dry them. The dungeons, which must not be confounded with the *oubliettes*, were 19 feet below the level of the court yard, and 5 below that of the ditch. They had no opening, but a narrow loophole communicating with the ditch. The wretched inhabitant of these dungeons, deprived of air and daylight, buried alive in a damp and infected atmosphere, in the midst of loathsome mud, the breeding-place of toads and noisome reptiles, surrounded by spiders and rats, could not long support his miserable existence amid such an accumulation of horrors. It has been asserted that these hideous places of torture were used only for the temporary punishment of refractory prisoners, and that no one was ever confined in them for more than a few days. But it is in proof, taken from the written archives of the Bastille, under the very eyes of those who had been either the witnesses or the sufferers of its cruel mysteries, that they were in use, not as places for intimidation, but for prolonged and premeditated torture. In regard to the iron cages, on which John Howard and the author of "Historical Remarks on the Bastille" have expatiated, it is right to say that nothing of the sort was discovered, nor any trace even of their previous existence found, whether by the curious crowds who flocked to examine and rummage every corner of this stronghold of despotic cruelty, after it had been captured and thrown open to the people, or by the masons and laborers employed in its destruction. The same must be said of the *oubliettes*, holes into which condemned prisoners are said to have been lowered, there to perish unheard of and forgotten, and of the question-chamber, in which suspected persons were put to the torture, in order to force them to avow their own guilt, and condemned prisoners in order to compel them to disclose the names of their accomplices. The Bastille could contain 50 state prisoners in solitary cells; but, by doubling them, this number could be raised to 100, or upward. When a greater number yet were placed within its walls, the accommodation was yet more miserable, the wretches being confined in cells opening on the ditches which carried off the ordure and sewerage of the prison, amid odors insufferable. The prisoners were, of course, miserably fed, on wretched viands, wretchedly cooked and filthily served; but this was, perhaps, owing rather to the abuses of inferiority of the governor, who made a profit of the wretches under his charge, and of prison management in general, than to the evil intentions of the government, which paid enor-

mous sums, amounting, at times, to so much as 100,000 francs *per diem*, for the maintenance of the state prisoners. Benneville asserts that, in his time, Bernaville, who was then governor, had a great number of prisoners at all prices, up to 25 francs a head *per diem*, and that their daily subsistence did not cost him, on an average, 20 sous. There was a regular tariff of expenses for the table, lights, and washing of all prisoners, according to their rank. A prince of the blood was allowed 50 francs a day; a marshal of France, 36 francs; a lieutenant-general, 24 francs; a councillor of parliament, 15 francs; an ordinary judge, a priest, or a financier, 10 francs; a considerable burgher, or an advocate, 5 francs; a small burgher, 3 francs; and the members of all the inferior classes 2 francs and 10 sous; the same being the rate allowed for the guards, wardens, and servants of the prison.—A prisoner might be examined at the instant of his arrest, or not until after weeks, days, months, or even years. He had no rights, no means of even offering a defence, nor of making it known to his friends where he was, or wherefore he was detained. Sometimes he was ignorant of both facts himself. He was allowed neither books nor papers. He could not communicate, in writing, even with the lieutenant of the police, except by especial permission obtained through the major of the Bastille; nor, even when permission was granted by the lieutenant, could he correspond with his friends or family, except through the police, who examined all the correspondence. Visits could be only made to prisoners on a written order from the lieutenant of the police, and that in the presence of some officer of the prison. All conversations on the cause of detention, treatment within the prison, and all topics of that nature, were strictly prohibited; and, in a word, sleeping or waking, living or dying, the prisoner was never, for a moment, free from the supervision of spies, who had become, from kee habit, expert judges of many points of the human character, and who observed, with the closest scrutiny, every word, look, action, motion of the prisoner, and endeavored to read his every thought, in order that it might be reported, as casting some light, more or less, on his innocence or guilt of the suspicion—for charges there were none—under which he was detained. He, therefore, could trust no man. Beyond this, the distinction between different prisoners, as to their fare, treatment, degree of freedom, and the like, was as wide, almost, as that between being prisoners at all and being at liberty. Some, whom it was desired to put to a slow death of agony, without trial or publicity, was allowed to languish, for years of living death on the most loathsome prison fare, in the horrible dens described above, until welcome death, at last, arrived to liberate them. Some, whom it was not designed even to punish, much less to destroy, but only to sequester from the opportunity of becoming dangerous to the state, enjoyed every comfort and even luxury, which a

freeman could enjoy, except that of freedom. They were served on china and silver, in fine apartments, on exquisite wines and delicate meats, furnished from without the prison. They were allowed books, papers, the attendance of their own servants, the society of their friends and families, the freedom of the whole interior of the fortress—all, in short, except to go beyond the gates. Yet amid all this comparative reason for content, there was, to the unhappy man, the ever-present knowledge, that he was there at the mercy of one supreme, irresponsible disposer, with whom no argument could be held, to whom no reason could be adduced, from whom no hearing could be obtained; and, lastly, from whom there was no appeal; that, on any caprice or change of policy, he might at any moment be subjected to the most horrible condition of the most wretched inmate of that house of woe; and that if it were desirable or determined to torture, or to kill, or to immure in oblivion and report him as being dead, no human being would ever be the wiser, until the end of time, as to what had been his real fate. It is this feature of the system, that rendered imprisonment in the Bastille, on a simple *ordre de cachet* under the royal seal, and with the minister's signature, both, perhaps, without knowledge of the king, without cause assigned, charge preferred, term of detention named, or any hearing ever, of necessity, to be had—beyond all consideration of the nature of the place, or of the mode of treatment of the prisoners—so horribly appalling.—Up to the date of the accession of Charles VII. the Bastille continued to be merely a royal fortress, when it became a state prison, under the government of Thomas Beaumont, who was in command when, in 1418, the populace broke into its precincts, massacred the Armagnac prisoners, and made as if they would have devoured their bleeding carcasses. During the reign of Louis XI., Philip Huillier, governor of the fortress, was doubtless an instigator of the most barbarous inflictions within its walls. Tristan l'Hermite, in his lavish subserviency to the caprices of his royal bossip, often made errors in sacrificing the wrong man, but what then? If the innocent were put to death in lieu of the guilty, the mistake was easily rectified—it was but a head more or less; and there were heads enough in France, that the justice of the king should not be defrauded. But it is Louis himself who was the author, the inventor, of the worst barbarities. It was he who, in the dungeons of the Bastille, as in those of the great Châtelet, caused pits to be excavated and lined with smooth and polished masonry, in which, owing to their form, the wretches who were lowered into them could obtain no respite from the agony of their forced and unnatural position, by any change of posture, since change of posture was not possible. In these hideous places were immured the princes of the house of Armagnac; and from these, twice in every week, they were drawn with cords, to be

scourged in the presence of the governor; and, again, once in every 8 months, to have 2 of their teeth torn from their jaws. Within the walls of this prison died Charles de Gontaut, Sieur de Biron, for treason against the crown and life of Henry IV. Great warrior, duke, peer, marshal of France, as brave as his own sword, the most daring of men in the battle-field, he was sentenced, as an act of grace, to be beheaded, privately, within the walls of the Bastille, instead of suffering the public ignominy of decapitation in the *Place de Grève*. At the time it was thought strange that so renowned a soldier as Biron should have wanted moral courage to meet inevitable death like a man; but such things are now better understood; and it is well known that they who have braved death a hundred times, and would brave it again, fearlessly and defiant, in the open air and before the faces of crowds of admiring and sympathizing spectators, often die, trembling and irresolute cowards, when they have no witnesses of their way of dying but God and the executioner. Within these walls, during the reign of Louis XIII., languished for 12 years the notorious Bassompierre, the friend of the king, but the enemy of Richelieu, whose enmity was, in those days, more to be dreaded than the judgment of the king. Within these walls, during the succeeding reign, was enacted the inexplicable mystery, which has continued a mystery to this day, of the Man in the Iron Mask. When first heard-of, he was confined in the Marguerite islands, in the Mediterranean, whence he was removed by De Saint Mars, who was his private governor, and answerable, it is supposed, for his safety with his own life, to the Bastille, where he died on Nov. 19, 1703, and was buried on the 20th in the cemetery of St. Paul, under the name of Machiati. No man, except the governor, so far as is known, ever saw his face, or heard his voice; 2 persons, to whom he had conveyed written words, in one case marked upon a linen shirt, in the other engraved on a silver plate, died, without apparent cause, immediately afterward. During his conveyance from the Marguerite isles, De Saint Mars dined at the same table, and slept in the same chamber, with him, with pistols ever at hand, ready to destroy him, in the case of an attempt on his part to reveal himself. In the Bastille he was waited on, at table and at his toilet, by the governor; who took charge of, and destroyed, all the linen he had once used. He was never seen but with a mask of black velvet, fastened behind his head with steel springs; and, when he went to hear mass, the invalids, who were in charge of him with muskets and lighted matches, were instructed to fire on him, instantly, in case of his speaking or showing his face. A hundred conjectures have been risked, as to who this mysterious person could have been, who was treated with such respect, yet with such jealous rigor; whose life was held sacred against taking off, yet made one scene of incessant misery. The absence of

any person of sufficient note from the stage of history, to account for such precautions, alone, baffles all inquiry. The general idea seems to be that he was an elder brother of Louis XIV., the fruit of an adulterous intrigue between Anne of Austria and the duke of Buckingham, or some other unknown lover, who, being born in wedlock, could not have been dispossessed of his claim to the throne, had his existence been admitted. This solution is, however, by no means satisfactory; since there is little reason for believing that, in the reign of Louis XIII., or of his successors, so clumsy, so complicated, and withal so uncertain a system would have been attempted, in order to keep out of sight a person, whom it would have been much more in accordance with the spirit of the times to remove altogether from the stage, on which he was one too many. After this time, the Bastille degenerated, from being a place of incarceration, or, as it might be, a living burial for suspected princes, pretenders to the throne, subjects too powerful for the state, and the possessors of perilous state secrets, whom it was not thought good to kill, into a gaol for common and vulgar malefactors; a place of detention for women who had inspired royal mistresses, or titled harlots, with jealousy or hatred; and a dungeon for the political antagonists of the minister. The imprisonment of Blaizot, the king's librarian, for obeying the king's own directions, by the minister De Breteuil, nominally at the king's order, brought to light the whole system of iniquity. Blaizot was delivered; but De Breteuil was not punished. Then on July 14, 1789, the people rose in their fury and their might; and, after a brief and unavailing defence, the stronghold of mediæval and modern despotism was captured, ransacked, all its mysteries and secret horrors laid bare to the indignant daylight, its towers razed to their foundations, and its dungeons filled with the copings of its battlements. Much exaggeration took place, in relation to the discoveries said to be made in its demolition, especially those in relation to one Count de Lorges; but it is sufficiently established that there was no such person in existence, much less in the Bastille. No exaggeration, however, was needed. Seven persons, only, were found in its cells and dungeons; one, the count de Solage, a prisoner since his 11th year; another, Tavernier, the son of Paris Duverney, who, after 10 years at the Isles Marguerites, had passed 30 years in the Bastille, and who reappeared on his liberation, bewildered, with a broken intellect, like a man awaked from a sleep of 40 years, to a new world compared with that on which he had closed his eyes. Records of horrors even worse than this were found inscribed on the registers of the prison. Two will suffice. They are the names of Father Theodore Fleurant, of Brandenburg, a Capuchin, retained many years on suspicion of being a spy; and of one Lebar, arrested at 76 and dead at 90 years. Nearly 50 years before, Cagliostro scrawled on the walls of his cell: "The Bastille shall be de-

molished, and the people shall dance on the area where it stood." This prophecy, at least, of the empiric and impostor, was realized to the letter. It was the Carmagnole which they danced about the blood-stained trees of liberty, and the tune to which they danced was Ça Ira. The revolution has many crimes, for which to answer, against humanity, against God. The destruction of the Bastille—of Basile, one may say, forever—almost suffices to obliterate them from the record.

BASTINADO (Fr. *baston*, a club, akin to the English word *baste*), a punishment inflicted by the Turks with sticks or leathern thongs on the soles of the feet.

BASTION. In ancient fortification, the walls of towns were flanked by round or square towers, from which archers and war machines could direct their projectiles on the storming enemy while he was held in check by the ditch. On the introduction of artillery into Europe, these towers were made considerably larger, and ultimately, in the beginning of the 16th century, the Italian engineers made them polygonal instead of round or square, thus forming a bastion. This is an irregular pentagon, one side of which is turned inward toward the tower, so that the opposite salient angle faces the open field. The 2 longer sides, enclosing the salient angle, are called the *faces*; the 3 shorter ones, connecting them with the town wall or rampart, are called the *flanks*. The faces are destined to reply to the distant fire of the enemy, the flanks to protect the ditch by their fire. The first Italian bastions still show their descent from the ancient towers. They kept close to the main walls; the salient angle was very obtuse, the faces short, and the parapet revetted with masonry to the very top. With such small bastions, the main office of the bastion was the defence of the ditch in front of the curtain connecting 2 bastions; consequently, the flanks were placed perpendicular to the curtain. These bastions were distributed either on the angles of the polygon forming the whole *accointe* of the fortress, or where one side of the polygon was so long that a part was not within effective musket range of the 2 projecting flanks. An intermediate bastion, called *piatta forma* was erected on its middle. With the improving siege artillery of the 17th century, large bastions became necessary, and very soon the curtain lost its importance, the bastions being now the principal points to be attacked. The office of the flanks was also changed: they had to enfilade, chiefly, the ditch in front of the face of the opposite bastion, and instead of being erected perpendicular to the curtain they were made perpendicular to the projection of that face, called the line of defence. The height of the masonry revetement was reduced so as to be covered from direct fire by the glacis or the parapet of the lower works. Thus bastions, in the hands of the French and German school, and subsequently in those of Vauban and Coehorn, underwent

many changes of form and size, until about 1740, Cormontaigne published a system of bastionary fortification, which is generally considered as the most perfect of its kind. His bastions are as large as they can well be made; his flanks are nearly, but not quite, perpendicular to the lines of defence, and great improvements are made in the outworks. Bastions are either full or empty. In the first case, the whole of the interior is raised to the height of the rampart; in the latter, the rampart goes round the interior side of the bastion with a sufficient breadth for serving the guns, and leaves a hollow in the middle of the work. In full bastions, cavaliers are sometimes erected: works, the sides of which run parallel with those of the bastion, and are elevated high enough to allow of the guns being fired over its parapet. From the commanding height of such cavaliers, guns of the greatest range are generally placed in them in order to annoy the enemy at a distance. The system of fortification based upon bastions was the only one known from the 16th to the end of the 18th century, when Montalembert put forward several new methods without bastions, among which the polygonal or *caponiers* system for inland fortresses, and the system of casemated forts with several tiers of guns, have found most favor.

BASTION, a village of Algeria, near Constantine. In 1520 a bastion was built in the vicinity of this village by the French African company, the first establishment of the French in Algiers. The place was afterward abandoned for Calle.

BASTON, ROBERT, prior of the Carmelite convent of Scarborough, and poet laureate and public orator of Oxford, died about the year 1810. He accompanied Edward I. when he invaded Scotland in 1804, in order to celebrate his achievements in verse, but was taken prisoner. He wrote several Latin poems, and a volume of tragedies and comedies in English.

BASTROP, a county of Texas. The soil is generally fertile, and the surface moderately uneven. The Colorado river, which traverses the county, is navigable by steamboats during six months of the year. Numerous smaller streams furnish excellent water power. In 1850 this county produced 148,860 bushels of corn, 6,572 bushels of oats, 18,552 bushels of sweet potatoes, 91,586 lbs. butter, 1,626 pounds of wool, and 1,478 bales of cotton. It was named in honor of Baron de Bastrop, a Mexican. Area, 890 sq. miles; pop. in 1857, 7,827, of whom 2,975 were slaves. Capital, Bastrop.

BASTWICK, DR. JOHN, the author of several works attacking the papacy, born in Essex, in 1593, died about 1650. He practised medicine

at Colchester. Some of his publications being considered to reflect upon the English ecclesiastics, he was fined £5,000 by the court of high commissions, excommunicated, and imprisoned. He thereupon attacked the bishops still more vehemently, and was sentenced by the exchequer court to pay a fine of £5,000, to

be set in the pillory, and to be imprisoned for life. In 1640 his sentence was reversed by the parliament, and reparation ordered to be made him from the estates of his persecutors, but the troubles of the revolution prevented the execution of the decree during his lifetime. He received an allowance, however, for his support.

BAT, a mammiferous quadruped, whose different genera constitute the order *chiroptera*. This is one of the most distinctly circumscribed groups of the class mammalia, and may be characterized as follows: general form disposed for flight; an expansion of the skin stretched between the four limbs and the greatly elongated fingers of the anterior extremities; this flying membrane naked, or nearly so, on both sides; the mammae on the breast; the clavicles very strong; the fore-arm incapable of rotation in consequence of the union of the bones. The bats consist of 2 very distinct groups, characterized mainly by the structure of the teeth; the first, containing the genera *pteropus* and *cephalotes*, is frugivorous, has the molar teeth, with flattish crowns, obliquely truncated and longitudinally grooved, 8 joints in the fingers, generally provided with a nail on the second finger, and the tail wanting or rudimentary; the second group, containing the genera *vespertilio*, *phyllostoma*, *nycteris*, &c., has the molars with sharp points like the true *insectivora*, showing at once the different nature of their food. The skeleton of the bats combines a great degree of lightness, with peculiarities in the anterior extremities, suitable for purposes of flight. The head is the longest in the frugivorous group; in all, the portion of the temporal bone containing the organ of hearing is much developed; they all have canine and incisor teeth, the latter varying in number from 2 to 4 in the upper, and from 2 to 6 in the lower jaw; the molars also vary from 8 to 6 in each jaw. The vertebrae of the neck are very broad; those of the back and loins are simple and almost without spinous processes, and much compressed at the sides; the sacrum is very long and narrow; the tail, when present, is short, and of use to support the interfemoral membrane and direct the flight. The number of vertebrae in *pteropus* is probably less than in any other mammal, being only 24. The ribs are remarkably long, as is the breast-bone; the upper part of the latter is greatly expanded laterally, to give a firm support to the very strong collar-bones; the front of the bone has also a crest, like the keel of the bird's sternum, and for a similar purpose, viz., the origin of the powerful muscles of flight. As the collar-bone, so the shoulder-blade is highly developed, especially in the active insectivorous bats; the arm-bone is very long and slender; the fore-arm consists of the usual 2 bones, but the *ulna* is quite rudimentary, and is united to the *radius*; the latter is very long and robust, and cannot be rotated, an admirable provision for an animal whose progression requires a constant resistance to the air. But the most remarkable

modification of the anterior extremity is in the hand; the bones of all the fingers, except the thumb, are extremely elongated, for the attachment of the flying membrane; the thumb is comparatively short, and provided with a hooked nail, by which the animal can climb or suspend itself. The thigh-bone is of moderate size, and so turned that the front surface is directed nearly backward; the fibula is quite small and slender, and has the remarkable condition of deficiency in its upper portion, the usual state of things being the reverse. The foot is not developed like the hand, the only peculiarity being a long-pointed bony process arising from the heel, and inclosed in the membrane between the legs; the toes are 5 in number, nearly equal, and furnished with hooked nails, by which they suspend themselves, when at rest, with the head downward. The seeming deformity and surpassing ugliness of the bats led the ancients to consider them as impure animals; even their naturalists display the grossest ignorance concerning them. Aristotle, Pliny, and others, considered them as birds; these opinions were copied during the middle ages, and are even now prevalent among many persons. The faculty of flight, which imposed on the ignorant, depends on an entirely different organization in the bird and in the bat. We have seen that the principal part of the bat's flying membrane is stretched between the enormously elongated fingers, and from them reflected to the posterior extremities; but in the bird, the parts which correspond to fingers are so rudimentary that the hand can hardly be said to exist; the wing extends beyond it, bearing the quills, the principal part, which belong to the epidermic system; the wings in the 2 cases are in no respects homologous. The bat, so active in the air, is very awkward on the ground. When the animal attempts to walk, the wings are shut and become fore-feet; the hook of one thumb is fixed to some object, and by it the body is pulled forward and to one side, the next step being by a similar movement by means of the nail of the other thumb. By this diagonal tumbling, the bats progress on a level surface; the length of the wings prevents them from rising from such a situation, and it is only when they gain some trifling elevation that they can commence their flight. In the air they are perfectly free, and their instinct teaches them, when desirous of rest, to seek some dark and inaccessible retreat, from the top of which they can hang, head downward, suspended by their hind claws; in case of danger, they have only to loose their hold, when their wings are at once spread and their enemies avoided. The diminutive size of the eyes is well known, and familiarly expressed in the very common saying, "as blind as a bat;" the insectivorous group, whose ears are largely developed, have very small eyes, placed almost within the auricle and concealed by the hair; but in the fruit-eating genera the eye is of the usual size, as is also the ear. The diminutive

eye is compensated for by the great development of the organ of hearing; the external ear is enormously large, in the *plecotus auritus* nearly as long as the body; there is a proportionate increase in the extent of the internal ear. The organ of smell in many insectivorous bats, as the *rhinolophidae*, is exceedingly acute; it is provided with folds of the integument, of great size and the most grotesque forms, rendering their physiognomy positively hideous, resembling that which would be produced by a nose turned inside out and complicated by a hare-lip. These appendages are found in the groups whose habits lead them into the darkest caverns, where there is not even a ray of light; and are intended, by increasing the delicacy of the sense of smell, to act as substitutes for eyes in situations where vision is impossible. Bats have such an extraordinary exaltation of the sense of touch, that Spallanzani was led into the belief that they had a sixth sense; his experiments showed that they could fly with perfect accuracy in the dark, avoiding every obstacle, even after the eyes were put out, and the ears and nose completely stopped up; this sense Cuvier had the sagacity to perceive was nothing but the exquisite sense of touch in the flying membrane. This membrane arises from the skin of the flanks, and consists of an abdominal and a dorsal leaflet, united into an exceedingly thin and delicate network; it includes not only the arms and hands but the hinder extremities being prolonged, more or less according to the genera, between the legs, and spread the length of the tail, forming a sensitive surface entirely disproportionate to the size of the body; to increase its sensitiveness it is entirely or nearly destitute of hair. The bat, therefore, is made acquainted with the distance of bodies by its different modifications impressed upon this membrane by the impulse of the air. The only peculiarity in the nervous system is the largeness of the spinal cord in the lower cervical and dorsal region, from which arise the nervous sensation distributed to the wings. In the *Myotis*, an African genus, the skin adheres to the body only at certain points, and by a loose cellular membrane, and is capable of being inflated with air by a communication with the large cheek-pouches; this inflation may be varied to such an extent that the animal resembles a balloon with head, wings, and feet. The mouth of the bat is uncommonly large, affording great facilities for the capture of insects on the wing. In the genus *Phyllostoma*, peculiar to America, the tongue is provided at its extremity with a row of wart-like elevations, arranged in a circle, and forming a complete sucking disk; by means of this these animals are enabled to suck the juices of fruits and the blood of animals. By mistake this faculty has been given to some of the large species of the *Myotis* of Asia, and hence have arisen the fabulous stories of the fabulous vampire, which destroyed people at night, by sucking their blood, and fanning their victims into unconsciousness.

the flapping of their wings. The vampire bat is a large South American species, of the genus *Phyllostoma*, whose natural food is insects, but which, if pressed by hunger, will suck the blood of poultry, cattle, and even of man; the blood is obtained entirely by suction from the capillary vessels, and not through any wounds made by the teeth; the stories told by travellers are much exaggerated, as the animal is harmless and not at all feared by the natives. The insectivorous bats have the simple stomach and short intestines of the carnivora; while the frugivorous species have a complicated stomach and a long alimentary canal. Bats are natives of all the temperate and tropical regions of the globe; those of this country belong chiefly to the *Vespertilionidae*. The large East India species, the roussettes, of the genus *Pteropus*, are extensively used as food. The fur of bats is generally exceedingly fine and soft. Bats fly to a considerable height and with great rapidity; they are nocturnal in their habits, avoiding the light and noise of day, during which they hang by the hind feet in some gloomy or obscure retreat; in the warm summer evenings they sally forth in search of prey, and themselves fall easy victims to the owls and birds of night and to any snare that may be set for them; they pass the winter, and indeed the greater part of the year, in a state of torpidity, or hibernation. The *Cheiroptera* are intermediate between the *quadrumana* and the true *insectivora*; the *galeopithecus*, or cat-monkey, of the Indian Archipelago, presents many characters of the *Cheiroptera*, though belonging to the *quadrumana*; the frugivorous genera approach the *quadrumana* in their teeth, while the insect-eaters resemble the true insectivora in their dentition; we find the monkey characters also in the free movements of the thumb, the deep divisions of the fingers, the pectoral situation of the breasts, the cheek-pouches of many, and in the organs of generation and digestion; the bats differ from the *quadrumana* especially in the great development of the breast-bone and in the impossibility of rotating the fore-arm.—North America has the following bats: *Vespertilio noveboracensis*, *V. pruinosus*, *V. subulatus*, *V. noctivagans*, *V. carolinensis*, *V. manticola*, *V. virginianus*; *Molossus cynocephalus*, *M. fuscus*; *Plecotus lecontei*, *P. townsendi*.

BATAAN, a province of the island of Luzon, forming the peninsula between the bay of Manila and the China sea; area, 450 sq. m.; pop. 1858, 42,500; chief town, Bolanga. It is noted for many excellent varieties of marble, which are extensively used in the churches and public buildings of Manila and other towns of the Philippines. The inhabitants of the towns and coasts of this province are of the Tegala race, and constitute the amount of population mentioned, and subject to the poll tax; but, aside these, the mountain fastnesses (a spur of the Zambales runs through the province) are inhabited by numerous tribes of Negritos. These, namely, harmless little black savages, are hunted

like wild cattle by the Spaniards and civilized Tegalas, for the avowed purpose of capturing young males and females, to be educated and then set at liberty among their wild brethren, who abound in the inaccessible mountain recesses throughout the island. Notwithstanding the great improvement of the Philippine races generally, under Spanish dominion, this coercive system has not been successful. The Aetas, the most noted of the Negrito race, are said to be "far less amenable to civilization than the wildest of the brown-complexioned race." In many instances an Aeta of tender age has been taken care of by wealthy families of Manila. The young Aeta is a well-formed, handsome-featured, bright black little creature, with brilliant eyes and lively motions, like the Indian antelope. In every such attempt at domestication, under the most favorable circumstances, the confined Aeta, either male or female, when full grown, has fled from the luxuries of civilization to share the naked savagery that has ever prevailed in their native mountains. They present a singular and marked contrast in character to the enslaved black races of Africa.

BATAO, or BATAK, an island about 1½ mile off the N. E. coast of Samar, the most northerly of that portion of the Philippine islands which goes under the designation of Visaya, or Bisaya. Area, 18 sq. m.; pop. 2,500. It forms a part of the district of Palapag, in Samar.

BATAK, a remarkable race of the island of Sumatra, inhabiting that portion called Batta, or Battas, bounded N. by Achin, S. by the ancient Malay territory of Menacabow, while, on the eastern and western sides, they are hemmed in by Malay colonies, which confine them to the mountainous region and plateaus in which the rivers Ledang, Bila, Burunom, and Batang Gadis have their sources. The distinctive peculiarity of the Bataks is that of lettered cannibalism. They have a written character, entirely original, forming an alphabet of 22 substantive letters and 5 vowel marks. They write from left to right, and, for ordinary purposes, write, like the Rejangs, south of them, upon polished joints of bamboo. Their books, and such, says Mr. Marsden, "they may with propriety be termed, are composed of the inner bark of a certain tree (a species of palm) cut into long slips and folded in squares, leaving part of the wood at each extremity to serve for the outer covering. The bark for this purpose is shaved smooth and thin, and afterward rubbed over with rice water. Their pen, when writing on the polished bark, is a twig, or the fibre of a leaf, and their ink is made of the soot of dammar gum mixed with the juice of the sugarcane." Their literary works, and they are very numerous, are chiefly rude treatises on the medical properties of plants and fabulous chronicles of their country, stories of necromantic feats, and works on divination, which latter they consult on all important occasions. The proportion of people who are able to read and write is much greater than those who are not.

But, in view of this indication of a high order of civilization, we are amazed to learn, on abundant and satisfactory evidence, that this people eat human flesh. However, their cannibalism is of a qualified character, oftentimes a ceremonial, or an act of justice, and, in such cases, the fleshy part of the palm of the hand of a criminal—a ravisher, robber, or murderer—is cut into strips, and, being well seasoned, is swallowed, without chewing, like a pill, by the relatives and friends of the victim; or, more generally, it is an act of vindictiveness, a piece of savage revenge, meant to utterly degrade the memory of an enemy. In this case the victim is attached to a stake, and pierced with kreesses and lances. After death has ensued, but while the body is yet warm, the participants in this act, who have been previously stimulating themselves with *bang*, rush with fury upon their lifeless victim, tear or cut away portions of quivering flesh, and, dipping them into a prepared seasoning of lemon-juice, salt, and capsaicum, swallow them, while they engage in an infuriate bacchanalian dance and outcry. As they show no disposition in any instance to torture a living criminal or captive of war, their ferocity toward a dead body appears the more singular, for they continue to lacerate and mangle the corpse in the manner that North American Indians cut up living enemies, until weary of their exertions. In connection with this fury shown to their lifeless enemy, it may be observed that they show great respect to their deceased friends, the bodies of whom are long preserved above ground, and frequently honored with the sacrifice of hogs, the blood of which is sprinkled over their coffins, and various offerings of rice and fruits. They also observe many singular rites previous to interment, to chase away a supposed fiend, who is ever watchful to seize the spirits of mortals as soon as placed under the earth; and therefore, no doubt, the destruction of their enemies by mastication, and the scattering of their bones to the dogs, is esteemed a higher revenge, as it brings peril on the soul. The Bataks have not been influenced by the Islamism, professed for several centuries by powerful races surrounding them. Mr. Siberg, Dutch resident on the E. coast of Sumatra, says they have a vague and confused idea of the immortality of the soul, and of a future state of happiness or misery. Their deities have Sanscrit names, *Batara-Guru*, the Supreme Good Spirit, *Suraya-Guru*, his vicegerent, and *Naga-Padoha*, the spirit of evil. In taking a solemn oath, they cut the throat of a chicken after the manner of the Chinese. The Dutch, since their intercourse with this singular people, represent them as being generally patient, truthful, laborious, and, not unfrequently, parsimonious, their chief vice being gambling. They understand the smelting and forging of iron, the growth of rice by irrigation, the culture, the weaving, and the dyeing of cotton, and have domesticated the ox, horse, buffalo, and hog. The territory inhabited by

this people presents a contrast as singular and as marked as that to be found in their character. One portion, Padang Luwas (wide plain), is a bleak, treeless steppe, differing entirely from the general vegetable luxuriance of Sumatra. On this plain not a single living creature appears to move. At the distance of miles may be descried, as an oasis in the deserts of Africa, an insignificant thicket or a small strip of brush-wood, along the banks of a marsh or spring branch. A desiccating, scorching wind blows for months together, and, from the numerous conflagrations of the rank *along-along* grass, spreads a dull glow, through which the sunlight scarcely forces itself, wavering and heavy. A furious, blighting wind, like the norte that sweeps across the gulf of Mexico, or the raging mistral in the pass of Coimbra, in southern India, issues from the gorges of Sipapo and Gunung Tuah, and howls from the west, day after day, for the most of the year, over Padang Luwas and the plains of Partibi. On the other hand are the beautiful and fruitful valleys of Mandeling, protected north and south by the lofty peaks of Barapi and Mali, and bordering the banks of the Batang Gadis (virgin river), which runs between the central mountains of Sumatra. These high chains are covered to their summits with stately woods, which afford abundance of good timber; and beside, says Mr. Wiler, a Dutch writer; "We may more safely give way to satisfaction when we see the well-watered rice fields, which, in small valleys, like scaphitheas, climb up a considerable portion of the acclivities, and, in the distance, extend to an invisible boundary. The eye rests constantly on ornamental groups of bamboos and various trees, or on the small clumps of fruit trees in which the villages lie concealed, their position especially marked by the abundance of coconuts and areca palms. Toward evening we observe near the villages numerous herds of buffaloes, oxen, and goats, while men, well fed and clothed, and what is more, a superabundance of children, prove that, in this favored region, the greatest prosperity has reigned for some years. The Bataks are divided into many independent states. Not less than 40 petty rajahs are enumerated. The Dutch have conquered a portion of their country on the western side, viz.: is comprised in what is called the Tapassar residency. The area of the Dutch portion is estimated at 7,920 sq. m.; pop. 78,000; and the whole Batak country, 20,500 sq. m.; pop. 850,000. This people have acquired some notoriety with the American public on account of the massacre in their country of two of our missionaries, Messrs. Lyman and Mearns, in the year 1835.

BATALHA, a Portuguese village about 20 miles from Lisbon, notable for a noble abbey of the Dominican order, built by John I. in 1462 in memory of a victory over the king of Castile. It was erected by an Irishman, Hacket, and is one of the most perfect Gothic structures in Europe. It contains some remarkable ruins.

presented by Manuel Palmæologus, when in 1401 he sought aid against the Turks.

BATAN, the principal island of the Bashee or Batanes group, in the Malay archipelago, and included with the Philippines. It is 12 miles long by about 4 miles wide, and its surface is occupied principally by mountains, covered with luxuriant vegetation. The highest peak, which has an elevation of 5,000 feet, is supposed to be an extinct volcano.

BATANGAS. I. A province in the south-western part of Luzon, one of the Philippine islands. The greater part of its surface is level and very fertile, producing coffee, cotton, cacao, indigo, maize, nutmegs, pepper, etc. A portion of the province is, however, mountainous, and some of the summits attain a considerable elevation. In its central part is Lake Bonbon, or Tael, 12 miles long and 10 wide. In this lake is an island, containing the crater of a volcano, which is still active, and in the midst of the crater is a small lake, the waters of which contain large quantities of sulphuric acid. It was this crater into which Dr. Kane descended in 1844. This lake is navigable for small boats, and has no communication with the larger lake which surrounds it. There are a few manufactures, and cattle raising is carried on to a considerable extent. The cattle are excellent, and are sent to the market of Manila. II. A town, the capital of the above province. It is situated on a bay, opening into the strait of Manila, and has a good trade with the city of that name. It was founded in 1581, and contains a number of handsome buildings. Pop. of the province, 180,987; of the town and district, 17,880.

BATATAS, the aboriginal name of 8 different plants, and the prototype of the French *patate* and English potato. *B. edulis* (or *convolvulus batatus*) is the sweet potato, of the class *pentandria monogynia*. *Solanum tuberosum*, the common potato, is a nightshade of the same order, but of a different natural family, and the *dioscorea batatas* of Decaisne is a species of yam, the subject of this article. This genus belongs, with few others, to the natural family of *dioscoreidaceæ* of Endlicher's class *artorkhism* or bread roots of the monocotyledonous division, while the 2 former belong to the dicotyledonous, and it was placed in the Linnæan *dioscorea hexandria*. The French call this species *igname de Chine* (Chinese yam), and some botanists, *dioscorea japonica*. It is very extensively and carefully cultivated in various parts of China, especially about Nankin, and in Fu-kien, under the name of *shoo-yu* and *sein-in*, being as generally used as our potato here. We have 2 species in the northern United States growing wild. Other species are cultivated by the aborigines of Oceania, Africa, and South America, between the tropics. A co-genus, *tamus communis*, yields shoots like asparagus, and is eaten in the southern parts of Europe after being well boiled. The *D. batatas* is a shrub, twining leftward, with a vertical root, covered by a yellow-brown epidermis, emitting many short rootlets and having

an indistinct groove lengthwise. The stem is round, as thick as a goose-quill, violet with white spots, rooting easily when left creeping on the ground; the leaves are generally opposite, triangular, heart-shaped, acuminate, with 7 to 9 veins converging to the tip, about 2 inches long and almost as broad, shining, smooth; petioles, 1 inch long; flowers, spike-like, in the axils of the leaves, the male ones small and yellowish; 6 scales of the involucre. The rhizome, or tuber, penetrates about 3 feet deep, straight down into the soil; is thickest toward the lower end, attaining the size of a man's wrist; it tapers upward to the thickness of the little finger; its parenchyma is opal-white, brittle, with milky, mucilaginous, sweetish-acrid sap, and scarcely any woody fibres. It is cooked by boiling as soon as the sweet potato, and in half the time required by the common potato. It may be baked under hot ashes, and becomes, in both cases, mellow and dry, as fine and white as wheat flour, and as insipid as the common potato, for which it may be easily mistaken. The smallest ripe tubers weigh about 2 drachms; the largest, over 2 lbs. The tubers pass the winter underground unharmed, even in France, where they were introduced in 1849 from Shanghai. They are preserved by the Chinese in straw covered by earth during the winter, not being so liable to decay as the sweet potato, and standing cold better than the common potato, nor sprouting in cellars so easily as the latter. Whole tubers, when planted, yield the best crop; but transverse slices of 2 to 4 inches produce also fine tubers, and even the stems laid into mellow ground root easily, and furnish good plants. Owing to the depth to which the root penetrates, the soil ought to be sandy, well spaded, well manured, and separated into hillocks, in rows, so that the digging may be rendered easy. Hoeing is not required, and poles may be dispensed with. According to many experiments of Decaisne, in Paris, of Hardy, in Algiers, and of many others, the yield of the batatas is double that of the common potato, all circumstances considered. It has been introduced into the United States, and has been cultivated with some success in New York, and some of the western states. This species, as well as others of the *dioscorea*, are also propagated by the bulbs that follow the flowers, and emit radicles and a shoot, even while yet on the plant, as some lilies do. Some plants of this family contain an acrid juice and are employed as a cure for bruises, swellings, and goitre; as antidotes against snake-bites, and, in different regions, as emetic, aperient, diuretic, purgative, or febrifuge.

BATAVI, a tribe or portion of the ancient Catti, a nation of Germany. They left their original country, though precisely at what period is not known, and settled on an island formed by the main stream of the Rhine, the Vahalis, now Waal, a branch of this river, the Mosel into which the Vahalis flows, and the ocean. This island was known as *Insula Batavorum*, and was

inhabited by the Batavi, and another tribe called Canninefates, when Cæsar was in Gaul. The Batavi formed part of the Roman empire, and supplied troops to the Roman armies, but paid no taxes, and were considered rather as allies than as subjects. The name Batavi is represented by the modern *Betuwie*, the appellation of a district of Holland, lying between the Waal and the Rhine, at the place where the two rivers separate.

BATAVIA, a city and province of the island of Java. The city is in lat. $6^{\circ} 8' S.$, long. $106^{\circ} 52' E.$ The province is bounded N. by Java sea, E. by Krawang, S. by Buitenzorg, W. by Bantam; area 1,012 sq. m. Pop. of the city in 1850, 65,000, of which 2,969 were Europeans and half breeds; 17,207 Chinese; 565 Arabs; 1,525 slaves; and 43,744 Javanese, Malays, and other natives of the archipelago. Pop. of province, 848,325, of which 8,817 were Europeans; 40,758 Chinese; 685 Arabs and other Asiatics. There are 7,223 private holders of estates in this province—a marked difference when compared with the rest of the island, where the Dutch government and native princes are almost the sole property holders. In 1814 the number of Chinese and their descendants in the province was 11,854; in 1834, it was 25,000; and in 1850, it had risen to 40,758. The Europeans, their descendants, and half breeds, in 1814, exclusive of military, amounted to 2,028, in 1834, to 2,800, and in 1850, to 8,817. In 1814, the number of slaves, consisting chiefly of the Lampong race of Sumatra, and natives of Bali and Celebes, was 14,289; which had diminished in 1834, to 9,500, and in 1850, to 7,556, of whom 1,525 were in the city. This decline took place through manumission, the cessation of the slave trade, the cheapness of free labor, and the indisposition of the Dutch themselves to the continuance of slavery, so actively promoted by their forefathers, in the eastern as well as in the western hemisphere.—To Jan Pieterszoon Koen, 4th Dutch governor general of Netherlands India, belongs the honor of founding in 1619 the city of Batavia, and establishing the dominion of the Dutch in the Malay archipelago. Hitherto the seat of government of the Dutch possessions had been at Amboyna; this locality, on account of the paramount value of the spice trade, was considered at the time the most appropriate and convenient. Koen's prescience soon revealed to him that a seat of government more central, and in a country of superior resources to the Moluccas, was indispensable for the consolidation of the Dutch power. The first site chosen was the mouth of the river Tangerang, 16 miles west of Batavia. This belonged to the prince of Jacatra, who refused to cede the necessary territory. Koen determined at once on fixing the future capital at Jacatra itself, where the Dutch had had a factory since 1611, established there by Pieter Both, 1st Dutch governor general; and with this view he transferred the principal part of the commercial and military establishments

from Bantam, surrounded the factory of Jacatra with a rampart, and virtually founded the city of Batavia in 1618 and 1619. In 1628 and 1629 the kings of Bantam and Jacatra, and the Sasunan or emperor of Mataram, laid siege to Batavia twice, with armies on both occasions estimated at upward of 100,000 fighting men; but were repulsed by Koen, who died by a stroke of apoplexy near the close of the last siege. In 1741, a revolt of the Chinese inhabitants took place, and the governor general, Adriaan Valckenier, ordered the massacre of 12,000 defenceless Chinese in the streets of Batavia.—The city, consisting at present of what may be called an old and new town, is situated on the shores of a bay some 60 miles wide, but of no considerable depth, studded with islets. The site of the old town, as already mentioned, was Jacatra, or Jayakarta, "Work of Victory." The land on which it stands is little above the level of the sea, and consists of a recent alluvial formation, which, bored to the depth of 270 feet, has been ascertained to consist of layers of clays, sands, and marls. The new town, originally suburbs of the old, lies inland from it, and is generally 30 feet above the sea level. Through both, there runs a river called Obilung, of no great size, but with a rapid current, having its source in the mountains of the interior, at the distance of some 50 miles. For several years after its foundation, the climate of Batavia had not been remarked for insalubrity; and certainly the ancient Jacatra had not been unhealthy, or it would have been speedily, as it could have been easily abandoned. The European-built town, however, soon acquired a proverbial reputation for insalubrity; being styled the "grave of Europeans." The Dutch, unmindful of a difference of 45° of lat., determined on having a town on the model of those in Holland, within 6° of the equator, and on the level of the sea. The river was spread over the town in many handsome canals; it lost its current, deposited its copious sediment, and generated pestilential malaria. Fatal remittent fevers followed. The obvious remedy for the evil was not applied until the vigorous administration of Marshal Daendels under the French rule in 1809, and continued under the government of the restoration in 1817. Many of the canals were filled up, and the river was carried between piers for a mile into the bay. These operations, carried on by skilful engineers, restored its natural current to the river; and at present Batavia compares favorably with other oriental cities in point of salubrity. The new town, or suburbs, has even become a place of resort for European invalids from British India, and other portions of Asia. The general range of the thermometer throughout the year is not higher than 86° nor lower than 65° Fahr. Meester Cornelia, and Weltevreden, are noted portions of the suburbs; the scenes of obstinately contested and bloody encounters between the Dutch and French troops, under Gen. Janssens, and the English under Sir Samuel Auch-

muty, which resulted in the conquest of Java by the latter. Weltevreden is also the seat of the chief military and civil prison of the island; and at this place an American citizen, Capt. Walter M. Gibson, of South Carolina, was held prisoner, during the years 1852 and 1853, which gave rise to discussions between the governments at Washington and the Hague. The local affairs of the province and city are administered by a resident, and assistant resident, and 6 commissioners.—In 1852, there belonged to the port of Batavia, 2 steamships, and 32 square rigged vessels, amounting to 7,200 tons. By the provisions of the consular convention made between the U. S. government and that of Holland, in 1856, an American consul is now permitted to reside at Batavia. Double tonnage duty and 12½ per ct. export duty are charged on foreign commerce; and the port regulations are illiberal and onerous.

BATAVIA, a village and township of Genesee county, New York. The village is situated on Tonawanda creek, on the Buffalo and Rochester railroad. Two other railroads connect it with Attica and Corning. It is the capital of the county, and contains churches of various denominations, 2 banks, 3 newspaper offices, and over 40 stores. Its neatly built dwellings and its wide streets lined with handsome trees, give it a pleasing appearance. It was incorporated in 1823. Pop. of the township in 1855, 5,304; of the village, 2,868.

BATAVIAN REPUBLIC. After the conquest of Holland by the French in 1795, and the flight of the Orange family to England, a Dutch republic was organized upon the model of the French republic, which was called from the ancient name of the country the Batavian republic. The new republic was obliged to cede to its powerful conqueror some of the southern portions of its territory, included in which were the cities of Maestricht and Venloo, and the province of Limburg; to pay France 100,000,000 florins, and to receive French garrisons into its fortified places. In a war with England the republic saw its fleet annihilated, its ports blockaded, its colonies devastated, and the rich island of Ceylon transferred from its own to British dominion. The Batavian constitution was several times modified, without, however, relieving the misfortunes of the country, and at length the legislative body, urged by Napoleon, changed the republic into a kingdom, and offered the crown to Louis Bonaparte, who, on June 5, 1806, was proclaimed king of Holland.

BATE ISLAND is situated at the southwestern extremity of the gulf of Outch, western Hindostan, lat. 22° 3' N., long. 69° 10' E. It has a good harbor, and was once a rendezvous of pirates. The island is frequented by throngs of Hindoo pilgrims, and the population of the town consists chiefly of Brahmans. It forms part of the province of Guzerat.

BATE, GEORGE, an eminent English medical practitioner, who was successively physician to Charles I., Oliver Cromwell, and after the resto-

ration, to Charles II. He wrote a historical sketch of the revolution, and other works in Latin.

BATEMAN, CHARLES PHILIP BOTELER, a British admiral, born in 1775, died at his residence, Corston, near Bath, Nov. 23, 1857. He was the only son of Capt. Bateman, who distinguished himself as a navigator in the 18th century, Bateman Bay, on the S. E. coast of Australia, being called after him. He entered the navy in early life, and was a midshipman on board the *Penelope*, when she captured the French frigate *Inconstante*, in 1798. Subsequently he took an active part in the attack on Guadeloupe, and in the seizing of Demerara, and was wounded on both occasions. In 1802, after having, in the preceding year, served as lieutenant of the *Monarch* at Copenhagen, he was made commander. At the defence of Cadiz in 1812, he commanded the British fleet as senior captain, and also cooperated with the army under the duke of Wellington in Spain. Shortly before his death he became a full admiral in the reserve list.

BATENITES (Ar. *bathen*, inward or esoteric), an apostate Mohammedan sect, and powerful society of murderers in the east, who, known also by the name of Ismaelites, Kirmatians, assassins, and followers of the old man of the mountain, spread terror through the Levant in the 12th and 13th centuries. They appeared in the time of the first contests between the Fatimite and the Abbasside caliphs as a religious or philosophical sect, and under the name of the "family of wisdom" extended themselves widely through Egypt, Syria, and Persia. They had a chief master, were divided into 7 ranks, and were accustomed to meet together, clothed in white, in a general assembly. The lower orders believed the Koran, but the higher ones substituted pantheism and free thinking for the faith of Islam. Hassan ben Saba, a descendant of the prophet, a native of Persia, and a disappointed politician at the court of Bagdad, was in 1090 initiated into the mysteries of the family of wisdom at Cairo. He immediately put himself at its head, and having returned to Asia transformed it from a religious to a military society, surprised the fortress of Alamut in the mountains of Persia, which he made the centre of his dominion, assumed the name of the old man of the mountain, which was borne also by his successors, and began his occupation of plotting and effecting the death of the princes, nobles, and eminent persons of the surrounding nations. His orders were readily obeyed by a troop of resolute young men, who cultivated murder as a fine art, and believed that to commit it skilfully was the true object of life, and who, before departing upon any expedition, intoxicated themselves with the opiate *hashish*, whence they were called *hashishins*, a name which, in passing into the western languages, became assassins. Hassan dreamed of universal power, and thought to attain to it, not by overthrowing empires by battles, but by destroying kings with poniards. He died after

a reign of 85 years, and left his society to bloody revolutions, and the Batenites no longer appeared, either as a religious or murderous sect, after the end of the 18th century.

BATES, a county in western Missouri, on the Kansas frontier. It is watered by the Osage river, and its tributaries, the Little Osage and Marmiton, and consists chiefly of rolling prairie. The capital town is Papinsville. Area, 1,880 square miles. In 1850 the productions were 120,840 bushels of Indian corn, 8,614 of wheat, 49,085 of oats, and 859 tons of hay. There were 5 churches in the country, and 285 pupils attending public schools. Pop. in 1856, 5,702, of whom 802 were slaves.

BATES, BARNABAS, an active promoter of cheap postage in the United States, born at Edmonton, in England, in 1785, died in Boston, Oct. 11, 1858. He came to America at an early age, became a Baptist preacher in Rhode Island, and was, for a time, collector of the port of Bristol. In 1825, having become a Unitarian, he established a weekly journal in New York, called the "Christian Inquirer." During Jackson's administration, he received an appointment under Samuel Gouverneur, postmaster of New York, and for some time performed the duties of postmaster himself. The information gained in this capacity, first interested him in the question of cheap postage. He investigated the subject for years, wrote, published pamphlets, and lectured throughout the country, and finally effected a material reduction in the rates of land postage. He was endeavoring to obtain a corresponding reform in ocean postage, at the time of his death.

BATES, EDWARD, a statesman and juriconsult of Missouri, was born in Goochland county, Virginia, about the year 1790 or 1791. His relations there were members of the society of friends (then numerous in Virginia), but his father being disowned for bearing arms in the war of the revolution, Edward and other children born after that event, were not members of that denomination. He was educated under the superintendence of Benjamin Bates, a relative of cultivated literary tastes, and, at an early age, emigrated to Missouri with his elder brother, Frederic, who was secretary of the territory. He commenced the practice of law soon afterward, and became eminent at the bar. He was a leading member of the legislature of Missouri for many years, under the territorial and state governments, as well as of the convention which framed the constitution of the state; and he represented the state in the 24th congress. But the condition of his private fortune obliged him to renounce the career to which his tastes and talents alike called him. He had for 30 years devoted himself so exclusively to his profession, that he was but little known out of his own state, when the internal improvement convention met at Chicago, in 1847. This convention is now chiefly memorable on account of the speech delivered before it by Mr. Bates. The members of the convention returned home filled

with admiration for his brilliant powers and dignified manners. Efforts were made to bring him back to political life, but he would neither be a candidate for office in Missouri, nor would he accept a place in the cabinet to which he was called by President Fillmore.—Mr. Bates was the friend of Henry Clay in 1824, and followed him in supporting the administration and in advocating the reelection of Mr. Adams. He was elected to congress as the friend of that administration, and was an advocate of the policy favored by Mr. Clay, including his views on the subject of emancipation. In 1854 he was an opponent of the repeal of the Missouri compromise, and has since cooperated with the free-labor or emancipation party in Missouri, not only in advancing their measure of state policy, but in hostility to the admission of Kansas under the Lecompton constitution.

BATES, JOSHUA, D. D., third president of Middlebury college, Vt., born at Cohasset, Mass., March 20, 1776, died Jan. 14, 1854. He was the son of a small farmer, and owing to the narrowness of his circumstances, was obliged to teach in winter, to defray his college bills, yet he obtained the highest academic honors at Harvard university, where he graduated in 1800. He pursued his theological studies at Andover, and in 1803 took charge of the Congregational church in Dedham, where he remained until he accepted the presidency of Middlebury college in 1818. His labors did much to promote the usefulness of that institution, which he conducted until 1839. In 1843, after having acted as chaplain to the senate of the United States, during one session, he took charge of a church in Dudley, Mass., performing his duties uninterruptedly until his death.

BATES, JOSHUA, already noticed as a member of the great commercial and banking house of the Messrs. Baring Brothers and Co., London, is, by birth and education, an American descended from an ancient and respectable family of emigrants from England, which appears in the history of Massachusetts as early as 1638. Their numbers soon became considerable, and their chief residence was on the borders, or within the limits, of the good old colony of Plymouth, at Hingham, Duxbury, and Weymouth; some of them serving as soldiers in the fierce wars with the natives, and others as representatives to the general court. From this faithful religious stock Mr. Bates is directly descended, and was born at Weymouth in 1758. He is the only son of the late Col. Joshua Bates, and received his early education from the Rev. Jacob Norton, who gladly rendered this service to the most considerable among his parishioners. At the age of 15, however, and only a short time before the death of his father, the young man entered the counting-house of William R. Gray, Esq., an accomplished man of business in Boston, where he received his first training in affairs, and where he, at once, showed not only a remarkable capacity for commerce, in its widest and most generous ex-

tent, but a singular facility for acquiring the knowledge needful for a commercial career. There he soon attracted the notice and regard of Mr. Gray's father, afterward lieutenant-governor of Massachusetts, and, during the middle and all the latter portion of his life, the leading merchant of New England. Into his employment Mr. Bates soon passed, and even before he had attained his majority was much trusted by both father and son, in difficult and large affairs. But troublesome times soon came; the embargo, the non-intercourse, and the war with England. Mr. Gray, who usually had, at least, 40 square-rigged vessels afloat, suffered from frequent captures, made both by France and England, and despatched Mr. Bates to the North of Europe to protect his interests there, complicated in themselves, and much disturbed by the course and consequences of the war. This brought him into relations with some of the great commercial and banking houses of Europe, especially those of the Hopes and the Barings; and, having the control of Mr. Gray's affairs all over Europe, for several years after the peace, he was led to a connection so free and intimate with them, that they, too, became aware, as Mr. Gray had long been, of his remarkable talent and judgment in whatever related to the commerce of the world. In the year 1826, through the influence of Messrs. Baring Brothers and Co., he formed a house in London, in connection with Mr. John Baring, son of Sir Thomas Baring, under the firm of Bates and Baring. On the death of the late Mr. Holland, these gentlemen were both made partners in the house of Baring Brothers and Co., of which Mr. Bates has ever since been an active and efficient member, and to which his uncommon abilities, knowledge, and judgment, have given not a little of the power it now exercises over the greater interests both of Europe and of America. On one occasion, at least, this action has been direct and official. For when, in the year 1854, a commission was arranged with all powers to make a final settlement of all claims from citizens of the United States on the British government, and from subjects of Great Britain against the United States, but chiefly for spoliation committed during the war of 1812-14, Mr. Bates, under the provisions of the treaty, was appointed umpire between the English and the American commissioners, in all cases where they should disagree. The position was an honorable and delicate one, involving not only great pecuniary interests of individuals, but the feelings of the respective countries toward each other, which might easily have been roused by imputations of injustice or unfairness. The two commissioners, as had been foreseen, often disagreed. Mr. Bates decided between them, plainly, promptly, and faithfully; and it is enough to say of his decisions that the voice of complaint regarding them has not been heard in either of the countries between which he was thus called to hold the balance. But long before this period,

while he was yet a young clerk in Boston, and living at a distance from his family and its resources, he was eager, as he always had been at home, to improve himself by severe self-culture. He sought, therefore, on all sides, for good books and for a good public library. Neither was easily to be had. There was, at that time, hardly an institution in New England deserving the name of a public library, and certainly none that was accessible to him or to any young man in Boston whose position was like his. The books, indeed, he got, and so laid the foundations for his future success; but he never has ceased to remember the difficulties he encountered in obtaining them. When, therefore, in 1852, he chanced, by a mere accident, to read the official report of a plan for establishing a free public library in the city of Boston, he was struck with the project as one which, if it could be carried out in the spirit in which it had been conceived, would be of permanent benefit to the city, and especially to the young men there who might be situated as he had been above 40 years earlier. He determined, therefore, at once, that such a project should not fail for want of means, and wrote immediately to the mayor of Boston, offering to contribute \$50,000 toward its success, annexing no conditions to his munificence except that the income of his fund should annually be spent in the purchase of good books of permanent value and authority, and that the city should always provide comfortable accommodations for their use, both day and evening, by at least 100 readers. Nor did he stop there. As soon as a suitable building was undertaken he began to send books for it in no stinted numbers, so that when its halls were dedicated Jan. 1, 1858, between 20,000 and 80,000 volumes, over and above all that had previously been purchased by the resources of his fund, were waiting to be placed on its shelves. His wise beneficence, therefore, which gave the decisive and guiding impulse to this important institution, and which still continues to foster and enlarge it, will, in all future time, render the city of Boston his grateful debtor, and preserve, through the successive generations of its people, a fresh recollection of the large space he filled in the interests of the stirring age in which he has lived.—Mr. Bates was married in 1813 to Lucretia Augusta, of the Boston branch of the Sturgis family, by whom he has only one surviving child, Madame Van de Weyer, wife of the eminent statesman, who has more than once been called to administer the government of Belgium, and who is now its representative at the court of St. James.

BATES, THOMAS, an English farmer, remarkable for his success in improving the breed of cattle, to which he devoted himself through a long life. He resided at Kirkleavington, where his farm was visited by all lovers of fine stock. He died Aug. 23, 1849.

BATES, WILLIAM, an eminent English non-conforming clergyman, born Nov. 1625, died July 14, 1699. He was one of the commission-

ers at the conference in the Savoy, in 1660, and assisted in drawing up the objections to the Book of Common Prayer. Dr. Bates was subsequently chaplain to Charles II., but was punished for non-conformity by the loss of his office. He wrote, in Latin, "Select Lives of Illustrious and Pious Persons." He enjoyed the friendship of many persons of high standing in church and state.

BATESVILLE, a town of Arkansas and capital of Independence county. Its excellent soil, its healthy climate, and its advantageous position on White river, here navigable by steamboats at nearly all seasons, have combined to render it one of the most important and prosperous towns in this part of the state. A rapid influx of immigration is fast swelling its population and increasing its trade. The surrounding country is thickly wooded with fine timber and supplied with abundant water-power. Pop. of the town in 1854, about 1,700.

BATH. I. A central county of Virginia, lying among the Alleghanies, and containing an area of 725 square miles. The surface is elevated, hilly, and well watered by the sources of the James, Cowpasture, and Jackson rivers. The soil is very fertile in the valleys, producing grain and feeding herds of cattle and sheep; wheat, wool, and live stock being its principal products. It contains a number of medicinal springs, from which it derives its name. In 1850, its real estate was valued at \$765,993; in 1856 at \$1,080,989, showing an increase of 84 per cent. Pop. in 1850, whites 2,434, slaves 947, free colored 45, total 3,426. In 1850 the productions amounted to 73,671 bushels of Indian corn, 17,502 of wheat, 42,676 of oats, 3,853 tons of hay, 12,271 pounds of wool, and 86,120 of butter. There were 6 churches in the county, 21 mills of various kinds, several factories, and 155 pupils attending schools and academies. Capital, Bath. II. A county in the N. E. part of Kentucky, watered by Licking river and by Slate creek. The N. W. portion of the county is remarkably fertile, superior in the quality of the land to the remainder. Stone, coal, and iron are found in great abundance. The county contains numerous springs, possessing medicinal qualities. Capital, Owingsville; area, 290 square miles; pop. 12,385, including 2,585 slaves. The staples are grain, hemp, and live stock. In 1850 the productions amounted to 1,033,990 bushels of Indian corn, 22,043 of wheat, 91,774 of oats, and 142 tons of hemp. There were 22 churches, and 898 pupils attending public schools.

BATH, shire town of Sagadahock co., Maine, situated on the west bank of the Kennebec river, and 4 miles below its junction with the Androscoggin river at Merry meeting bay, 12 miles from the ocean, 85 miles S. of Augusta, the capital of the state. It was the seat of one of the first English settlements on the continent of America. In 1603, Henry IV. of France granted to De Monts, the great French navigator, all that

portion of the continent lying between 40° and 46° N. latitude, and from that time to the peace of Ryswick, in 1697, the whole country E. of the Kennebec was occupied by the French, under the name of Acadia. The same year De Monts attempted to find a passage to Canada by sailing up the Kennebec. In 1606, James I. of England granted all North America, between 35° and 46° N. latitude, to the colonies of north and south Virginia; and in 1607, the first settlement of the English race in the new world (if we except Raleigh's unsuccessful attempt in 1584) was made near the mouth of the Kennebec. Owing to the continual border warfare between the English and French, the settlement was abandoned the next year. Many marks and memorials of the undertaking still exist. The settlement of Plymouth by the Puritans in 1620 prevented the French from extending their possessions west, and the river tacitly became the admitted boundary between Acadia and Massachusetts bay—"not as a line of peace and concord, but the place of future controversies." This whole region was therefore abandoned, until the growth of American commerce, a little prior to the revolutionary war, again caused its settlement in 1756; and the town of Bath was incorporated, 1780, having then a population of a few hundred. It was incorporated as a city in 1850. The river here is 1 mile wide, with abundant anchorage and docks the tide rising about 12 feet. The city extends 2½ miles along the bank, and 1 mile back. It is irregularly laid out, and has few public buildings. Some of the churches are costly and elegant, and the Sagadahock house is a large hotel. The dwellings are mostly neat and tasteful. The principal business of Bath is ship building, being surpassed in that only by Boston and New York. In 1850, 45 vessels of which 34 were ships, 22,240 tons burden, were built here; 1851, 40 vessels, of which 18 were ships, 18,782 tons; 1852, 48 vessels, of which 40 were ships, 24,340 tons; 1853, 65 vessels of which 47 were ships, 49,400 tons; 1854, 69 vessels, of which 56 were ships, 58,454 tons; 1855, 77 vessels, of which 56 were ships, 56,925 tons; 1856, 67 vessels, of which 56 were ships, 50,182 tons. A large portion of these are owned in Bath, and are engaged in commerce in all parts of the world. In 1854, 164,000 tons were owned here, of which 25,000 were employed in coasting, 2,582 in cod-fishing, and 1,100 in mackerel-fishing. As the river never freezes here, and is of great depth, Bath has great advantages as a commercial port.—The public schools are of a high order, consisting of primary, grammar, and high schools. There are a lyceum, academy, and public library. There has 2 newspapers, 1 daily and tri-weekly, and 1 weekly; 4 banks, and 10 churches. The custom-house is a granite edifice, costing about \$50,000. A branch of the Kennebec and Portland railroad connects it with Brunswick, 12 miles; there is also steamboat communication with Boston and Portland. Its population is

1810, was 2,490; 1820, 3,026; 1830, 3,778; 1840, 5,141; 1850, 8,020; 1857, about 12,000.

BATH, a post village in the township of Bath, capital of Steuben co., New York, lies on Conhocton creek, 20 miles N. W. of Corning. It contains 6 churches, a bank, 8 newspapers and some mills and factories. The Buffalo, Corning, and New York railroad passes through the place. The neighboring country is fertile and thickly settled. Pop. of township, in 1855, 6,031; of village, 2,012.

BATH, or **BERKLEY SPRINGS**, the capital of Morgan county, Virginia, distant about 8 miles from the Potomac river and the Baltimore and Ohio railroad, and 186 miles N. N. W. of Richmond. The place is much visited by invalids, the water of the springs being deemed very efficacious in cases of neuralgia, dyspepsia, and chronic rheumatism. The temperature is 74° F.

BATH, a post village of Richmond county, Georgia, much frequented by planters in the summer. It lies 20 miles S. W. of Augusta.

BATH, a city in England, co. of Somerset, 108 miles W. of London, by Great Western railway; pop. 54,240. It is, perhaps, the handsomest city of England, built chiefly of freestone and upon the sides of high hills; the city rises in a succession of terraces, circuses, and gardens, displaying, at one view, a noble architectural landscape. It is traversed by the river Avon, and is in the midst of a beautiful country. It is a place of resort for invalids, on account of the hot springs, from which the city derives its name, and which are beneficial in palsy, rheumatism, gout, and scrofulous and cutaneous affections. Their character is alkaline sulphureous, with a slight proportion of iron. There are 3 springs of a constant temperature of 109°, 114°, and 117° F. The hot spring yields 128 gallons a minute. Bath was formerly a place of great fashion and gayety, and the celebrated beau Nash presided as master of ceremonies over its festivities. In the last century and commencement of the present, it was at the height of its celebrity, but the opening of the continent after the war diverted the stream of visitors toward the German spas. Owing to its numerous conveniences and proximity to London, and the magnificent mansions and country houses in its immediate vicinity, it is still much frequented, and, on account of its mild temperature, is a favorite residence of elderly people and invalids. The city is one of the most ancient in Britain, and was reputed to have been founded before the Roman invasion. Joined with the city of Wells, it is a bishop's see. The city has an abbey church, a relic of an ancient monastery. There are well-supported hospitals for general purposes, and for the uses of those who resort to the city for the sake of its baths. In the days of its meridian glory, it was the residence of several men of intellectual distinction, in particular of Pitt and Sheridan. William Beckford, the author of "Vathek," as remarkable for his eccentricities

as literary taste, resided and died at Bath. The borough is also remarkable in modern legislative history as the constituency of Mr. Roebuck and of Lord Duncan, 2 very active liberal members. In the vicinity are the celebrated mansions of Longleat, the seat of the marquis of Bath, Fonthill abbey, and Bowood, the seat of the marquis of Lansdowne.

BATH, a place for bathing, a vessel for containing water in which persons may plunge or wash their bodies. The bath was used from the earliest times of which we have any record. The heroes of Homer not only bathed in the sea or rivers, but refreshed themselves also in the natural warm springs, and in vessels artificially heated. Thus the royal princess Nausicaa was accustomed to bathe in the river of Phæacia, whither Ulysses also was conducted for a bath after his arrival in the realm of Alcinous. Homer celebrates the streams of the Scamander as being naturally warm and agreeable to bathers, and, according to the later poets, hot springs were the baths of nymphs. In artificial baths the vessel is described as of polished marble, like the basins which have been discovered in the Roman baths, and seems not to have contained water itself, but to have been used for the bather to sit in while water was poured over him. Thus a warm bath was administered to Ulysses, in the palace of Circe, and Telemachus was led to the bath by the fairest of the slaves of Menelaus, after which he was perfumed with precious essences. In the historical periods of Greece, bathing rooms were a part of the dwellings of kings and of wealthy citizens, and the laws of hospitality prescribed the immediate tender of a bath to strangers. There were immense public baths to which the citizens in general resorted, the same apartment being used by both sexes. At Athens, baths were attached to the gymnasia, and Plato made public baths one of the institutions of his perfect republic. Thus the bath was a source of health and pleasure to the Greeks long before the Romans borrowed the custom.—Concerning the bathing habits and establishments of the latter, however, our knowledge, derived from books, from the ruins which still exist, and, above all, from the bath which was some years since (1824) exposed at Pompeii, is much more ample. In the better days of the republic, according to Seneca, the bathing-houses were small, dark, and inconvenient; they were placed under the superintendence of the ædiles, and contained warm and cold baths alone. It was not until the days of the empire, that the immense thermæ were erected, whose ruins still amaze the traveller, and perplex the antiquary. The public bath at Pompeii, though, being destined for the use of a small provincial town, it was inferior in size and appointments to those of the capital, was similar to them, probably, in its internal arrangements, and contained all their essential parts. It occupied a plot of ground of irregular figure, embracing a superficial area of about 10,000 square feet. It con-

tained two distinct bathing establishments, of which the smaller is believed to have been appropriated exclusively to the women. In the men's baths is first a court, about 60 feet long, bounded on two sides by a Doric portico, in which those who were waiting their turn for admission to the *thermae*, might walk or repose upon the benches placed along the wall. From this court there was a communication by means of a corridor, with a smaller room, *frigidarium*, in the walls of which holes are observed, which served for the insertion of pegs, on which the clothes of the bathers might be hung. This room was the *apodyterium* (the place where the clothes were left), for those who intended to take the *natatio*, or cold bath. From it another door opened into an apartment in which was placed the *natatio*, *natatorium*, *piscina*, or cold bath. The *piscina* itself occupies the centre of the room; it is of white marble, circular, 12 feet 10 inches in diameter, and a little more than 3 feet in depth; 10 inches below the lip, and 2 feet 4 inches from the bottom, it is surrounded by a marble seat, 11 inches in width. The water was conducted into the basin by a bronze spout, the remains of which can still be discerned in the wall of the chamber. In the bottom was an outlet, by which the water could be let out and the *piscina* cleaned, while the rim is furnished with a waste pipe. From the *frigidarium* a door opened into a similar room, which appears to have been warmed by a large portable fire-place, and was furnished with bronze seats, placed along the wall. This room served as an *apodyterium* for those who were to use the warm baths, and here the bathers, previous to entering the *caldarium*, were rubbed and anointed with some of the immense number of fragrant oils and ointments which were employed by the ancients. Having left his dress in the *tepidarium*, the bather passed directly into the *caldarium*. The flooring of this apartment, which, in accordance with the directions of Vitruvius, is twice as long as it is broad, is placed upon small pillars (*suspensurae*), so that the heat from the furnaces had ready and free admission beneath it. The walls, too, were hollow, the inner being connected with the outer wall by strong cramps of iron and brick, and they thus formed one large flue for the circulation of the heated air. At one end of this room was placed the hot bath. This was a shallow cistern (*alveus*) 15 feet in length by about 4 feet in breadth, and 2 feet and half an inch in depth; it was elevated above the level of the floor, and the bathers ascended to it by means of 2 steps, the top one serving for a seat; on the inside another seat surrounded the whole of the cistern at about half its depth. The hot water was furnished by caldrons placed upon the other side of the wall. At the end of the room, opposite the *alveus*, was the *labrum*, a huge vase or *tazza* of white marble, 8 feet in diameter, and having a depth internally of not more than 8 inches. From the centre projected a brass tube, probably throwing up cold water.

This was perhaps received upon the head of the bather, before he quitted the heated atmosphere of the *caldarium*. Adjoining the *caldarium* was placed the furnace over which was set the caldron for supplying hot water to the baths. The women's baths resembled those of the men, except that the different apartments were much smaller, and the arrangements less complete.—The great *thermae* erected by the emperors at Rome, were much more extensive and magnificent structures. The baths of Caracalla were 1,500 feet long, by 1,250 feet broad. Beside the baths proper, they contained a large open place for exercise in fine weather, a covered circular court for the same purpose, libraries, halls for the declamations of philosophers and poets, academies for instruction, &c., the whole profusely adorned with painting, stucco-work, and statuary. In these immense establishments, the apartments were not only more numerous, but some of them on a very much larger scale. Thus the *natatorium*, or swimming bath, in the baths of Diocletian, was 200 feet long by 100 feet broad, and it is calculated that in the whole establishment more than 18,000 persons could bathe at the same time.—In the times of the republic the cold bath alone was ordinarily employed, but later the hot and warm bath were likewise generally used. The order in which they were taken, varied according to the directions of the physicians or the inclination of the bather. Previous to bathing, gentle exercise was generally taken, and it was recommended that the bather should remain in the *tepidarium*, or warm chamber, for a time previous to undressing; after undressing he proceeded commonly to the *caldarium*, and after sweating some time in its heated atmosphere, he either gradually immersed himself in the hot water bath, or had hot water scald poured over the head and shoulders; then cold water was poured over the head, or the bather plunged into the cold *piscina*. He was then scraped with *strigils* (small curved instruments made generally of bronze), dried and rubbed with linen cloths, and finally anointed. When one bath alone was desired, it was taken just before the principal meal, but the luxurious Romans bathed after as well as previous to their *cena*, and Commodus is said to have indulged in 7 or 8 baths a day.—The Persians and Arabs have, since the decline of Roman civilization, more particularly cherished the custom of bathing than any other nation; a fact which is to be attributed both to the warmth of their climate and to their religious institutions. The laws of Mohammed ordain prayers daily, and an ablution of the face, hands and feet before each of them. There are many other occasions for bathing, and the public bath is as sure to be found in every village as the mosque. The person first remains in the room till he begins to perspire profusely; he is then rubbed with wool, and soap is distributed over his body, after which he enters one of the deep tubs of warm water with which the bath

ing is furnished. To frequent the bath is even a greater obligation than to go to the mosque, and it is customary, especially for the women, to make it an occasion for reunions, and after bathing to take coffee together. The modern Turkish and Arab baths show the indolent and effeminate tastes of the people, but there are remains of old Arab baths, built in the time of Moorish conquest, in Barcelona, Granada, and other cities of Spain, which have a more splendid though less luxurious character, and indicate a more vigorous national spirit.—In India, also, there are public baths, which are associated with the practice of shampooing. The bather is extended upon a plank, and a vigorous attendant pours hot water over him, presses and bends the various parts of the body, cracks all the joints, and continues this operation of pouring, pulling, and pressing for about half an hour. He then rubs him briskly with a hair brush, with soap and perfumes, after which the Indian is obliged by his fatigue to sleep a few hours, but wakes extremely refreshed. The women in India take a lively pleasure in being shampooed by their slaves, and Europeans who enter upon the process with a sort of fear describe the sensation which results as delightful and peculiar.—In Egypt public bathing is a very complicated art. The person having left his dress in the reception room, proceeds through a long gradually warmed passage into the spacious bathing room, in which the steam of boiling water and the perfumes of burning essences are combined. He there reclines upon a kind of hammock, and when he has perspired sufficiently, the process of shampooing is performed upon him. He then passes into an adjoining apartment, where his head is profusely covered with the foam of soap, and his body with a kind of pomatum. In 2 other rooms he is washed with both warm and cold water, and he returns to the open air as he entered, through a long passage the temperature of which is graduated. The whole expense for passing through one of these baths is about an American half dollar, but the Egyptian populace generally prefer to bathe themselves, or to take a partial course in the public baths.—The northern nations have also their peculiar usages in respect to bathing. The Russian lord has his bathing room in his own house, and the people in the villages frequent the public bath at a small expense. The entire operation consists, first, of a perspiration, then of friction, and of successive ablutions in hot and cold water. The poorer people, however, adopt a simpler method. They remain in the bathing-room only till they begin to perspire freely, and then rush out and throw themselves, perhaps through a crust of ice, into the nearest stream or pond, thus exposing themselves suddenly to the extremes of temperature, and tempering themselves as steel is tempered. Among the Russians of Siberia, the bath is especially in use as a means of driving off the effects of a violent cold and preventing fever. The person is taken

into the bath-room and placed upon a shelf within an inch or two of a steaming furnace. After he is well parboiled in this position, he is drubbed and flogged for about half an hour with a bundle of birch twigs, leaf and all. A pail-full of cold water is then dashed over him from head to foot, the effect of which is described as electrifying. He is next put in an exhausted condition to bed, and physic is administered to him. It is rare that a fever does not beat a retreat after a few repetitions of the bath and the physic. Mr. Bayard Taylor, in his winter travels in Lapland, gives an account of similar baths. The bather is placed on an elevated platform, and vapor produced by throwing water on heated stones beneath. In that barbarous country the whipping with twigs is performed by women.—The use of the bath has not marked the manners of the most civilized modern nations, as it did those of the polite nations of antiquity. Yet it is less neglected now than formerly, and public baths, though they are not centres of resort for the people, are found in all large cities, and private baths are common in dwelling houses.—HYGIENE OF BATHING. To bathe, in the widest sense of the word, is to surround the body, or a portion of it, for a temporary period, by a medium different from that in which it usually exists. The medium may consist of air or vapor, of water, either pure or holding various substances in solution, or finally, even of sand or mud. The body may be wholly or partially immersed in the medium, as in the ordinary plunge bath, the foot bath, hip bath, &c., or the medium may be poured with greater or less force upon the body, as in the shower and douche bath. The temperature of the medium, as it is warm, hot, or cold, modifies powerfully the effect of the bath. In the present article, we shall confine our attention to the effects of the ordinary water bath, and of the hot air and vapor baths. The temperature at which the water bath may be taken varies from 82° to 112°, or even 120° F., and baths are ordinarily divided into cold, warm, and hot, according to the sensation they communicate to the bather. These sensations, it must be recollected, are no very accurate measure of the true temperature; the water which to one person seems warm, to another feeling cool. Systematic writers have further multiplied these divisions; perhaps the most convenient among them is the following, proposed by Dr. John Forbes. He divides the water baths into

The cold bath,	from	82° to 86° F.
The cool	"	86° to 92°
The temp.	"	92° to 98°
The tepid	"	98° to 104°
The warm	"	104° to 112°
The hot	"	112° to 120°

On plunging into cold water the bather experiences a shock attended with a sensation of cold that may amount to rigor, and with a sudden catching of the breath, caused by the contact of the cold fluid with the surface of the face and trunk; in some persons this spasmodic anhe-

lation is so great as entirely to prevent speech. The surface appears contracted and shrunken, the superficial veins become smaller or disappear, the color assumes a bluish tint. After a short time, the duration of which depends partly upon the coldness of the water, partly upon the constitutional vigor of the bather, reaction takes place; the chilliness and rigor disappear, and are succeeded by a sensation of warmth, which diffuses itself over the whole surface; the respiration becomes tranquil, and there is a general feeling of lightness and vigor. After a variable period the bather again begins to suffer from the cold, trembling and rigor supervene, the movements become impaired and feeble, the pulse is smaller and less frequent, the breathing is oppressed, and the whole body is languid and powerless. If he leave the water before the occurrence of the second period of chill, there is a renewal of the reaction, a glow pervades the surface, the color returns and is heightened, the pulse is fuller and stronger than before the immersion, and there is a general feeling of buoyancy and vigor. M. Begin, experimenting upon the cold bath, took 9 baths in the Moselle under the ramparts of Metz, toward the end of October, the thermometer in the open air standing at from 2° to 6° Réaumur (36½ to 45½ F.). At the moment of immersion, there was a sensation as if the blood were all driven to the interior of the body, particularly to the chest, the breath was gasping, interrupted, quickened, almost to suffocation; the pulse concentrated, small and hard; there was rigidity of the tissues, but without trembling. At the end of two or three minutes a feeling of calm followed, the respiration became deep, the skin warm, and all the movements were free and easy. "All the muscular movements are quick, easy, and precise; one feels as if the skin and sponneuroses were applied more closely to the muscles, and that these thus held down acted with greater force and energy than in their ordinary state. Soon a lively redness covers the surface, a marked and pleasant feeling of warmth spreads over the skin; it seems as if one swam in a liquid raised to 86° or 98°; the body appears to seek to expand in order to multiply the surface of contact; the pulse is large, full, strong, regular; few sensations are so delicious as those felt at such a moment. All the springs of the animal machine acquire greater flexibility, strength and firmness, than they had previously; the limbs cleave with ease a fluid which no longer offers any resistance; one moves without effort, with quickness, and above all with an incredible lightness." In from 15 to 20 minutes there was a gradual return of cold and discomfort; it was then time to leave the water. If the bather still remained, he was seized with chills, and the difficulty of moving became so great that he was in danger of drowning. On quitting the water, continues M. Begin, before the reaction has ceased, the transition to the cold air gives no unpleasant sensation. In despite of the wind and the moisture which

covers the body, the latter remains warm, and the skin is so insensible that the friction of the towel is not perceived; indeed M. Begin sometimes rubbed off the cuticle without being aware of it. To endure a bath of such a temperature with safety, to say nothing of enjoyment and benefit, requires a vigorous constitution and great promptness of reaction. M. Rostan, another French physician, was unable to remain longer than 6 minutes in the Seine at a time when the water was 43° F., and then reaction only fully occurred on the following night after many hours of discomfort, accompanied by a painful feeling of weight about the head. Reaction takes place most promptly, and a lower temperature can safely be borne, when exercise is conjoined with bathing, as in swimming, than when the body is at rest. Salt water is more stimulating than fresh, and renders the reaction more marked and of longer duration; the shock of the waves too, by rendering muscular action necessary to resist it, has a similar influence. The effects of the cold bath, where it agrees, are tonic and bracing; it stimulates the skin, improves the appetite, and renders the circulation more active and vigorous. It hardens the system, and causes it to be much less sensitive to vicissitudes of temperature. The regular employment of the cold bath is the best protective against the liability to take cold on moderate exposure. Its beneficial effects depend mainly on the promptness and completeness of the stage of reaction; if full reaction does not take place, if the bather remain cold and shivering, with a sense of weight about the head, the bath is injurious. It should not be taken when the body is fatigued and exhausted, or when it is overheated by exertion in hot weather; on the other hand, a moderate degree of warmth or even a gentle perspiration, provided there is no exhaustion, does not contraindicate its employment. When first employed, it should be used but a few minutes until the bather has tested his powers of resistance and reaction, and the interval can then be gradually increased. When the shower or cold bath is taken in the house, it may be used immediately on rising while the body is still warm from bed; but the sea bath suits best about noon, or some 8 hours after the morning meal. The presence of disease of the heart or of the great blood vessels renders the use of the cold bath dangerous. The cool and temperate baths produce effects similar in kind to those of the cold bath, but less in degree; they are the cold bath of the invalid and feeble. Infants and old persons, as a rule, bear the cold bath badly. Young infants in particular do not react promptly, but remain cold and blue for some time after taking a bath, yet in feeble and strumous children the bath is one of our best means of hardening and invigorating the constitution. With them it is best to commence with the tepid bath, and the temperature should gradually, day by day, be lowered; when the cold bath is arrived at, it should be given in a properly warmed apartment; the

immersion should be sudden, complete, and continued but for a few moments, and the child should immediately afterward be well and thoroughly rubbed with dry flannels.—The effect of the warm bath is very different from that of the cold bath. There is no shock; on the contrary, the temperature is grateful to the bather. The blood is solicited to the surface, which becomes full and rounded; rings, which in the cold bath slipped from the fingers, are more fixed than under ordinary circumstances. The cuticle absorbs water and is softened, and the epithelial debris are readily removed. The pulse is unaffected, irritability of the nervous system is soothed, pain dependent on spasmodic action or neuralgia is allayed, and the relaxation of the skin extends to the deeper seated parts. Its beneficial effects are specially recognizable after excessive muscular exercise or after the fatigue and excitement of a long journey, in refreshing and tranquillizing the system. On the other hand, the warm bath exercises none of the tonic and astringent influence which is produced by the cold bath; its frequent use tends to relax and debilitate, while it renders the system more sensible to the variations of external temperature.—The hot bath, 98°—112° F., produces at first an inconvenient and even painful sensation of heat; from the determination of blood to the surface, it soon becomes reddened and swollen, the face is turgid, the eyes injected; the action of the heart is increased, the pulse becomes fuller and more frequent, the carotid arteries in particular beat with violence; the breathing is oppressed, there is a painful sensation of weight about the head; soon the parts not covered by the water break out into a profuse perspiration, which only partially relieves the discomfort of the patient. On leaving the bath the excitement does not immediately subside; the pulse continues to beat with force and frequency, the extremities, particularly the lower, remain swollen, the patient perspires abundantly, while the secretion of urine is diminished; there is a sense of muscular fatigue, and the whole system is relaxed and weakened. The hot bath should only be used therapeutically, and even then the cases to which it is applicable are not numerous.—Beside the cold and warm water bath, the body may be exposed to the action of air artificially heated or to the vapor of boiling water; the former, the *laeopticum*, was habitually employed by the Romans, the latter is much used by the Russians, the Turks and the Egyptians. The effects of both, when the temperature is much elevated, are at first highly stimulating. The beat of the heart is increased in force and frequency; the pulse rises to 90, 100, 120, and even 150 or 160 beats in a minute; the blood is driven powerfully to the surface, the face becomes flushed, the eyes injected and suffused, the skin turgid, and the bather soon breaks out into a profuse sweat; if the temperature is very high and long continued, after a time the whole mass of the blood becomes heated above its

normal standard (see ANIMAL HEAT), and this may be attended with dangerous or fatal consequences. Owing to the free evaporation from the surface, the hot air bath can be borne of a much higher temperature than the vapor bath. The ordinary heat of the Russian or oriental bagnio is from 120° to 140° F., though it is occasionally raised as high as 180° or 190° F.; while, when the air is moderately dry, a temperature of from 200° to 270° F. has been borne for some time with impunity.

BATH, EARL OF. See PULTENEY, WILLIAM.

BATH, KNIGHTS OF THE, a military order in Great Britain, for which an origin as remote as the time of the first crusade has been supposed, but which is first distinctly mentioned in the reign of Henry IV. It is related by Froissart that, at the coronation of that king in the tower of London, in 1399, 46 esquires were made knights, and were called knights of the bath, because they had watched and bathed during the night preceding, and that they wore on the occasion long coats trimmed with white fur, and had white laces hung about their shoulders. From that time it was usual for English kings to create knights of the bath on occasion of celebrating what were deemed important events, as at the coronation of themselves or their queens, the birth or marriage of princes or princesses, on the eve of starting upon foreign military expeditions, and after gaining a battle or taking a town. At the coronation of Charles II., 68 knights of the bath were made, but the order was then neglected and discontinued, till in 1725 George I. revived it by letters patent. He gave a book of statutes for its government, by which it was decreed that the order should consist of the sovereign, a grand master, and 36 companions. Its badge, of pure gold, was to be a sceptre of 3 united imperial crowns, from which grew the rose, the thistle, and the shamrock, and around which was inscribed the ancient motto, *Tria juncta in uno*. It was to be hung by a red ribbon from the collar obliquely over the right shoulder. The collar should contain 30 ounces troy weight of gold, and be a complicated arrangement of 9 crowns and 8 roses, thistles, and shamrocks, the latter being enamelled in their proper colors, and attached to the crowns by gold knots enamelled white. A silver star also, made to resemble the badge, and with a glory or rays proceeding from its centre, should adorn the left shoulder of the knight, being embroidered upon the left side of his mantle. The apparel of a knight of the bath was ordered to be a red surcoat, lined and edged with white and encircled by a white girdle, a crimson mantle lined with white and fastened about the neck with a cord of white silk, a white silk hat surmounted by plumes of white feathers, white boots, red stockings and breeches, and a sword in a white leather scabbard. The order was thus raised to a splendor and dignity which it had not before enjoyed, and in 1815, after the long and terrible wars in which England had been engaged, the prince

regent, seeking for some way to reward the numerous military heroes, determined to enlarge the number of the knights of the bath. Of the 3 denominations and ranks which he then ordained in the order, the first, consisting of knights grand crosses, was not to exceed 72 in number, exclusive of princes of the blood royal, who also were high officers in the army or navy. This dignity was to be conferred only upon officers who had reached the rank of major-general in the army, or rear-admiral in the navy, excepting that 12 of the number might be appointed for eminent civil services. The grand crosses were distinguished by wearing over their badge and star a wreath of laurel winding about an escrol, on which was inscribed *Ich dien*. The second class, consisting of knights commanders, was originally limited to the number of 180, exclusive of foreign officers holding British commissions, but might be increased in any time of war when officers of signal merit distinguished themselves. The knights commanders take precedence of all knights bachelors in the kingdom, and no one is eligible to this dignity till he has reached the rank of major-general in the army or rear-admiral in the navy, and no one is eligible as a grand cross till he has first been a commander. The third class, consisting of knights companions, takes precedence of all esquires in the kingdom, though not of knights bachelors, and no officer is admissible to this dignity who has not received a medal in reward for valor, or been specially mentioned as of signal merit in the despatches of his superior officer.

BATH-KOL. There is much discussion in the theological world concerning the meaning and application of this term. It seems to signify either "the daughter of voice," or, as Jennings and Horne have interpreted, "voice of the daughter." It is maintained by some writers that this latter interpretation is an inadmissible liberty with the Hebrew idiom. However the term be translated into our language, it was by the Hebrews understood to designate the fourth degree of prophetic influence, and was in high esteem among them, being consulted on important occasions. Priebeaux says it was a fantastical way of divination, and inclines to give it about as much credit as he bestows on the heathen consultations called *Sortes Virgilianæ*; while Kitto considers this an unfair statement, and thinks theologians have been inclined to divest the Bath-Kol of its proper dignity, lest a comparison should be instituted between this Jewish mode of prophecy and the voices said to have been heard in several instances in the New Testament. Lightfoot considers all Bath-Kol prophecies to have been devices of the devil or Jewish fables. In the early history of the church, and beyond the apostolic times, there are instances of voices heard by pious persons, generally accredited by Christians, as well as many claims to such audible communications, regarded now as spurious. What the Bath-Kol was,

it is difficult at this day precisely to determine. Probably the Jews did not always mean that in Bath-Kol the voice was actually heard. Maimonides says, "The Bath-Kol is when a man has such a strong imagination that he believes he hears a voice without himself." According to this interpretation, the Bath-Kol would be liable to great abuse by designing persons. In this manner it doubtless was often pretended that revelations were given, when the pretender himself had no such impression. It was a sort of internal revelation, not necessarily authenticated by any outward signs. The Jews say that Bath-Kol was always with them, even in the times when there were no prophets. Thus in that time which the Christian denominates a hiatus from Malachi to Christ, when there was no vision, the Jew says the hiatus was bridged by Bath-Kol. After consulting in this mode of divination, the first words heard, no matter by whom pronounced, were considered prophetic. A relic of Bath-Kol may perhaps be found among Christians to this day, in the superstition of opening the Bible at random and taking the first passage the eye falls upon, as indicative of the line of duty, or the turn of fortune for the day. The Jews say that Bath-Kol was the mode of divine impartation to Moses, Abraham, David, and Nebuchadnezzar. It was the sole mode of taking the divine counsel during the entire period of the second temple, because this temple wanted the 5 principal things which were the glory of the first, among which were the visible presence of the Shekinah, the Urim and Thummim, and the spirit of prophecy.

BATHORI, the name of a noble Transylvanian family, of German origin, several of its members of which have played a distinguished part in the history of that country. I. LUDLAS, a priest. He flourished about the middle of the 15th century, and made the first Hungarian translation of the Bible. II. STEPHAN, chosen, in 1571, prince of Transylvania. He was afterward elected king of Poland, and crowned at Cracow, in 1576. On this event he resigned his rule over Transylvania, at the same time recommending his brother to the house of deputies as his successor. He died, after a prosperous reign, in 1586. III. CHRISTOPHER, elder brother of the preceding, and elected prince in his stead, 1576. The Jesuits came to Transylvania during his reign, and the education of his son was committed to their charge. He died in 1581. IV. SIGMUND, son of the preceding, and chosen prince even before the death of his father. He was a weak-minded man, and, having married a daughter of the house of Hapsburg, made an agreement with the emperor Rudolf II., the reigning prince of the house, that, if he should die without issue, the rule of Transylvania should be transferred to the emperor or to his successor; a compact which he, as merely an elected prince, had no right to make. He was afterward persuaded by the Jesuit Simon Genga, to make over to

principality to Rudolf, on the promise of being made bishop and cardinal. Notwithstanding some violent opposition on the part of the deputies, one of whom was put to death, this transfer was effected in 1593, and Bathori retired into Silesia. But, after waiting several months in vain expectation of the promised bishopric and cardinal's hat, he returned to Transylvania, reassumed the princely office, and immediately transferred the same to his brother Balthazar. He then retired into Poland, but, on the death of his brother, returned, and again assumed the government of Transylvania. He was soon, however, compelled by the emperor to resign for the 3d time, and, having received from him a pension and an estate, finally died at Prague, March 27, 1613. V. ELIZABETH, the wife of a Hungarian count, renowned and execrated for her remorseless cruelty. Believing that the blood of young maidens would restore freshness and bloom to her shrivelled skin, she caused a great many to be brought to her castle on various pretences, and then, to obtain the desired bath, murdered them, with the aid of 8 of her vassals. Her horrible practices were at last discovered, and, with her 8 assistants, she was brought to trial. One of her accomplices, a man, was decapitated, the other 3, who were females, were burned alive, and the countess herself was thrown into a dungeon, where, after several years of confinement, she died in 1614.

BATHURST, a town of New Brunswick, capital of Gloucester co., situated on the most southern point of the bay of Chaleurs, and due north-east of Halifax, about 250 miles. It has a good harbor, and is noted for ship-building.

BATHURST, a settlement on the isle of St. Mary, near the mouth of the Gambia, on the W. coast of Africa. It was founded by the English in 1816, and is the principal of the English establishments in Senegambia. It is not a healthy station. The island has about 3,000 inhabitants, few of whom are Europeans.

BATHURST, a county and town of New South Wales, in Australia. The county lies between the rivers Lachlan and Macquarie, at the foot of the western slope of the Blue Mountains, and is one of the most fertile regions in Australia. Gold mines were here discovered in 1851. The town, situated in the centre of the gold region, 98 miles W. N. W. from Sydney, was founded by the English in 1815, and is the oldest English town in the interior of Australia. The population of the county in 1851 was 6,405, since which time it has much increased.

BATHURST INLET, an inlet of the Polar sea, projecting due south about 75 miles, out of Coronation gulf. It is in a direct line between the magnetic pole and Great Slave lake, and about 800 miles from each.

BATHURST ISLAND. I. An island off the north-east coast of Australia. It lies just west of Melville island, and is much smaller than the latter. It is separated from the mainland of Australia by Clarence straits on the south, and

from Melville island by Cockburn sound. II. An island in the Arctic ocean, discovered by Parry in 1819, and the most eastern of the group called Parry islands. It is separated from North Somerset on the S. by Barrow strait, and from North Devon on the E. by Wellington channel. It is laid down on more recent maps as a peninsula, being joined to the larger land of Cornwallis island by a narrow isthmus. It lies due south of Grinnell land.

BATHURST, the name of an old English family, who are said to have come over with William the Conqueror. Within the last 3 centuries several of its members have made themselves prominent.—RALPH, dean of Wells, born 1620, died June 14, 1704. He wrote some elegant Latin poems, and (in conjunction with Sir Wm. Petty, Robert Boyle, John Evelyn, Sir Kenelm Digby, Elias Ashmole, Sir Christopher Wren, and others) was one of the founders of the royal society of London, which received a charter of incorporation from Charles II., in 1660, within 6 months after his restoration.—ALLEN (earl of Bathurst), born in London, Nov., 1684, died Sept. 16, 1775. He was eldest son of Sir Benjamin Bathurst, treasurer of the household to Queen Anne, before she ascended the throne. Entering parliament in 1705, he strongly opposed Marlborough and the whigs. The Tories having come into power, he was called to the house of lords, as Baron Bathurst, in 1711, to increase the ministerial majority. In 1757 he was made treasurer to the prince of Wales, and, on the accession of this prince as George III., soon after, declined further public employments, but accepted a pension of £2,000 a year. In 1772 he was created Earl Bathurst, and spent the evening of his life in retirement. As a peer, he opposed the septennial bill, defended Bishop Atterbury, resisted the attainder of Bolingbroke and Ormond, and the bill for allowing pensioners to sit in parliament. He displayed great political hostility to Sir Robert Walpole. Lord Bathurst was on familiar terms with Addison, Gay, Bolingbroke, Prior, Rowe, Congreve, and Pope. The last-named dedicated to him the 8d epistle of his "Moral Essays," and Boswell reports Dr. Johnson to have said, "except Lord Bathurst, none of Pope's noble friends were such as that a good man would wish to have his intimacy with them known to posterity."—HENRY, born May 2, 1714, died Aug. 6, 1794, was the only surviving son of the foregoing, by the daughter and sole heir of Sir Peter Apsley. He practised at the bar, and was made chief justice of the common pleas in 1754. He was appointed lord chancellor in 1771, with the title of Baron Apsley, and resigned the seals in 1778, having voted against the Chatham annuity bill, a ministerial measure. He was president of the council in 1780, and was assaulted in the Gordon riots by the mob, who pulled off his wig. He was a man of such grave demeanor and steady habits, that, on one occasion, his father, a *don vivant* (then aged 89), having invited a party of friends to meet him, the en-

tainment proceeded very quietly, until midnight, when Lord Apsley retired. The earl then exclaimed to the rest of the guests, "Now, my friends, that the old gentleman is gone, I think we may venture to crack another bottle." He is described by Lord Mahon as a careful, pains-taking lawyer; a mild, inoffensive man.—HENRY, bishop of Norwich, born Oct. 16, 1744, died April 5, 1837, cousin of the second Earl Bathurst. He was educated at Winchester, entered New college, Oxford, in 1761, and there took the degree of D. C. L. in 1776. Having taken orders, he obtained a rectory in Norfolk, and then the rich family living of Cirencester, with the deanery of Durham, and a canonry of Christ church, Oxford. In 1805 he was made bishop of Norwich, which gave him a seat in the house of lords. In his diocese he was an exemplary prelate; in parliament he strongly advocated Roman Catholic emancipation, concessions to the dissenters, and parliamentary reform. He was not eloquent, and the few sermons which he published are commonplace. His life was written by his eldest son, Dr. Henry Bathurst, archdeacon of Norwich (died 1844), and shows very strongly that not only the bishop but his children were convinced that the whigs were ungrateful, because, when they came into power, they neglected to translate him to a richer see.—HENRY, 2d earl of Bathurst, son of Baron Apsley, born May 22, 1762, died July 27, 1834. He entered the house of commons, and was successively lord commissioner of the admiralty, commissioner for India, foreign secretary, and colonial secretary. He was active in the wars against Napoleon. At St. Helena the latter accused him of great rudeness. When the tories came into power, in 1828, he became president of the council, but resigned in 1830. He was afterward first lord of the admiralty.—BENJAMIN, son of the bishop of Norwich, born 1784, was sent in 1809 as an English courier to Stockholm, and disappeared in the neighborhood of Bremen, supposed to have been killed by the French. He was the father of the lady Bathurst whose horse got frightened at Rome, in 1824, and threw her into the Tiber, where she was drowned.

BATHYCOLES, a celebrated artist of Magnesia, in Thessaly, on the Mæander, who constructed for the Lacedæmonians the colossal throne of the Amyclæan Apollo, at Amyclæ, near Sparta, supposed to have flourished in the time of Solon, in the 7th century B. C. Quatremère de Quincy, in his *Jupiter Olympien*, has given an interesting view of the splendid god and his superb throne, designed from the description of Pausanias.

BATHYLLUS OF ALEXANDRIA, a freedman and favorite of Mæcenas, who, together with Pylades of Cilicia, excelled in the imitation or ballet called *pantomimus*. In the reign of Augustus, with Bathyllus and Pylades as principal performers, pantomimes were brought to their highest point of perfection, but they grew more and more

obscene and demoralized; yet no woman took part in the public pantomime till the worst period of the empire. After the termination of the civil wars, when Mæcenas was living in voluptuousness and splendor in his superb palace on the Æquilian hills, the pantomimic dancers played an important part in his entertainments.

BATICALO, a town and seaport of Ceylon, and capital of a district of the same name. It is situated on a small island, about $8\frac{1}{2}$ miles in circumference, called by the natives Puliantive, and lying just off the E. coast of Ceylon. A thick grove of cocoanut trees surrounds the town, and gives it a remarkably picturesque appearance. A small square fort is its principal defence. The inhabitants are mostly natives and Dutch residents.

BATISTE, a fine, white, and very compact linen, distinguished by its delicate, firm, and uniform threads from every other linen texture. The name is derived either from the Indian material *bastas*, or from one of the early manufacturers of it, Baptiste Chambray, who lived in the 18th century, and from whom it was also called the cloth of Chambray, or Cambray; hence the English word cambric. The batiste manufactured in India is esteemed the best. It is interwoven at each end with threads of gold and silver, and the first breadth of each piece is gilt or wrought with an Arabic flower. These adornments distinguish the value of the article, being numerous in proportion to the fineness of the batiste. The European batiste is principally manufactured in France, the Netherlands, and Switzerland; that of France being made from the best flax, and approaching most nearly in fineness and whiteness to the Indian. Lately a batiste has been manufactured partially from cotton, which closely resembles the finest muslins, and is called the batiste-muslin, or, from the place of its first manufacture, the Scotch batists.

BATJUSCHKOFF, CONSTANTIN NIKOLAEVITCH, a Russian poet, born at Wologda, May 18, 1787, died there July 29, 1855, received his education at St. Petersburg, took a part in the campaign against Finland, and in the French wars of 1818-'14; occupied for some time the position of librarian in the public library of St. Petersburg, and was subsequently attached to the foreign office at home, and to the Russian embassy at Naples. His prose writings give interesting accounts of Russian literature, and reviews of Tasso, Ariosto, and Petrarch. He was an enthusiastic admirer of the Italian poets. While at Dresden he translated Schiller's "Bride of Messina" into Russian, and also paid much attention to astronomical studies. He lost his mind in 1818, an affliction from which he never recovered. A complete edition of his poems appeared at St. Petersburg in 1834, and in Smirdin's collection of classic Russian poets.

BATMAN, a weight used in the Levant, at Constantinople, Aleppo, Smyrna, and in parts of Persia. At Aleppo, and in the Turkish dominions, it consists of 6 okes, each weighing

400 Turkish drama, and is equal to 16 lbs. 8 oz. 15 dr. avoirdupois.

BATN-EL-HAJAR (the womb of rocks), a rocky and desolate tract of Nubia, in Africa, extending on both sides of the Nile, between lat. 21° and 22° N., and long. 30° 35' and 10° E. The Nile here flows in cataracts and rapids, and amid rocks and islands, but some of the natural obstructions to its navigation have been removed by Mohammed Ali's engineers. The inhabitants are about 200 in number, chiefly Bedouin Arabs, and are described as well made, with fine features, and of a dark brown complexion. Bean trees, and a few date trees and cotton plants, are almost the only vegetable productions, and are cultivated on narrow plots occurring at intervals near the river, the beans furnishing the chief food of the inhabitants. On the western bank of the river are found deserted monasteries, and the ruins of ancient temples and villages. This tract is a dependency of Egypt.

BATNEARS, or **BHATTIS**, a people in the northern part of Hindostan, whose principal city is Bhatneer, 207 miles N. N. W. from Delhi. They are composed of the aboriginal race of Jats and a dominant race of Rajpoots, who are supposed to have migrated into this country about 6 centuries ago. Though Mohammedans, they differ from the followers of the prophet in allowing their women to appear unveiled and to associate freely with men. The Batnears have always been a savage race of reebooters, living a sort of nomadic life, and making predatory excursions into the neighboring districts. The Batnear district was conquered and nearly depopulated by Tamerlane, in 1398. It was again conquered by the bold British adventurer, George Thomas, in 1800; and by the cessions made by Scindia, in 1803, came into the possession of the British, who, however, have yet failed to correct the lawless and predatory character of the people.

BATOANA, a small tribe of the large family of Bechuana, in southern Africa. They dwell upon the borders of Lake Ngami, whither they come as conquerors, and have dispossessed and reduced to slavery the native population, called the Bayeye. They live chiefly by hunting, and are described as deceitful and suspicious.

BATOKA, a curious tribe of men in southern Africa, who occupy 2 considerable islands in the river Leambye, and the adjacent country on either bank. They formerly held wide sway, and were the theme of numerous fables and superstitions among neighboring tribes, but are now, for the most part, subject to the Barotse. The Batoka universally knock out the upper front teeth of both sexes, at the age of puberty. This causes the under lip to protrude in a most sightly way, and gives to them a hideous appearance, but yet the Batoka admire it, consider it a type of beauty, and conceive nothing to be more precious than the possession of upper teeth. The Batoka are very degraded, both physically and mentally, and much addicted to smoking

the pernicious mutokwane (*cannabis sativa*). This produces a sort of frenzy, and makes them after a few puffs break out in a string of half-coherent utterances. Soldiers smoke it on coming in sight of enemies, that they may make an effective onslaught. It is extensively used, not only by the Batoka, but by all the tribes in the interior of southern Africa.

BATON, a staff of office, a sign of authority in all times and among every people. Though generally reserved to eminent persons, as princes, judges, generals, and fathers of a family, yet among the ancient Babylonians it was the custom for every one, on issuing from his house, to take a baton, carved with some distinctive sign—as a rose, a lily, or an eagle. Homer mentions neither crowns nor diadems, but describes particularly the baton or sceptre. The Spartan *skytala*, or baton of generals, and *caduceus*, or that of ambassadors, are well known. The baton of the Roman consul was of ivory, that of a pretor was of gold, and that of an augur was terminated by a crooked beak. Similar to the last was the episcopal baton of the middle ages, which afterward assumed the form of a cross. In mediæval and modern times, batons have been most in use in France, where they mark every order and almost every occupation. It was long a fashion in the universities to hold a red baton while interpreting the Iliad, and a yellow baton while explaining the Odyssey.

BATON ROUGE. I. A south-eastern parish of Louisiana, divided into east and west Baton Rouge, and comprising an aggregate area of about 740 sq. miles. The Amite river washes its eastern border, and the Mississippi intersects it, forming the boundary between the 2 divisions of the parish. The surface of the western part is low and flat. It is subject to frequent inundations, and the only available land is on the bank of the river, which is a few feet higher than the general level. On the eastern side of the Mississippi the soil is of better quality, the surface is more diversified, and there are extensive forests of live oak, cypress, and magnolia. The staples are cotton, sugar, and maize. In 1850, the productions amounted to 1,846 bales of cotton, 14,998 hogsheads of sugar, 926,228 gallons of molasses, and 378,692 bushels of Indian corn. There were 6 churches, 2 newspaper offices, and 750 pupils attending public schools. Capital of the eastern division, Baton Rouge; of the western, Baton Rouge Courthouse. Pop. of the E. in 1850, 11,977, of whom 6,351 were slaves; of the W., 6,270, of whom 4,350 were slaves. II. The capital of Louisiana, is on the eastern bank of the Mississippi, 129 miles above the city of New Orleans. It is one of the earliest settlements made by the French colonists, and is said to have been the site of an old Indian village. Various reasons are given for its name, but the most probable seems to be that it was called after a chief whose appellation, translated into French, was the red staff. It has made little progress for some years,

deriving its chief importance from the fact that the United States government has there a large depot of arms, and a barrack in which, some years since, several companies of United States troops were stationed. It is also the site of a large military hospital. It is in the midst of a large district devoted to the cultivation of sugar and cotton, and but for the difficulties opposed to the navigation of the Mississippi for sea-going vessels, would become a great city. It was the scene of much trouble during the years which preceded the purchase of Louisiana by Mr. Jefferson. The town is well built. The population in 1858 was 4,500. Beside the United States barracks and the hospital, Baton Rouge also contains the state prison or penitentiary of Louisiana.

BATONI, **POMPEO GIROLATO**, a painter of modern Italy, born at Lucca, in 1708, died at Rome, Feb. 4, 1786. Some of his best works are at Lisbon and St. Petersburg. His principal picture at Rome is the fall of Simon Magus at the church of *St. Maria degli Angeli*. He was inferior in many respects to Mengs, but is frequently designated, like him, as "the last of the Romans."

BATOOM, **BATOU**, or **BATUM**, a town in Asiatic Turkey, on the shore of the Black sea, and 4 miles north of the mouth of the Tchorkuk; pop. about 25,000. It has an excellent and commodious harbor.

BATRACHOMYOMACHIA, the title of a mock heroic poem, in which a battle (*μυαχη*) of the frogs (*βερραχαι*) and the mice (*μυες*) is humorously described. The author of this production was probably a native of Alexandria, and not Homer, to whom it is falsely ascribed.

BATSHIAN, **BATOHIAN**, or **BATSIAN**, a mountainous and fertile island in the Molucca archipelago. It belongs to the Dutch, who wrested it from Spain in 1610.

BATTA. See **BATAK**.

BATTALION, a tactical unit of infantry which holds the same relative position toward the brigade or line that a company does to the battalion. A battalion may be composed of companies of different regiments, or a single regiment may contain several battalions. The regiment is a unit of administration—the battalion a unit of exercise and a constituent portion of an active army. Eight companies constitute a battalion in the American tactics for infantry of the line, and duties are assigned by the American tactics to a colonel, lieutenant colonel, major, adjutant, and sergeant major, who constitute the field and staff of such a battalion. The number of companies in a battalion is different in the armies of different nations, and has changed from time to time in those of the same nation. In the English service, 10 companies constitute a battalion; in the Prussian, 4; and in the French the number has varied from 6 to 10 within the last 50 years.

BATTENS, pieces of timber of different lengths, 7 inches in width, and about 2½ inches

thick. They are used for making floors, and are also, after being divided so as to be 2½ inches wide and 1½ thick, placed against walls to separate the laths on which plastering is to be put from the walls.—In nautical affairs, battens are strips of wood nailed down over the tarpaulins which cover the hatches, or fastened to portions of the rigging to prevent injury from chafing.

BATTERING RAM (Lat. *aries*), the earliest, simplest, and, until the improved usage of artillery, the most effective machine for destroying stone walls and the ordinary defences of fortified towns. The primitive form of this implement was a huge beam of seasoned and tough wood, hoisted on the shoulders of men; who, running with it, at speed, against the obstacle, wall, gate, or palisade, made what impression they might against it. The second step was strengthening and weighting the impinging end of the machine, with a mass of bronze, brass, or iron, to prevent the detrition and compression of the beam consequent on its action on the wall. The 8d measure, which, in fact, gave the whole real value to the machine, was the suspending it by chains or ropes, from a crane or trivet, in such a manner as to allow it to swing some 30 or 40 feet to and fro, under the impulse of human force, as nearly as possible on the plane of the horizon. When the impetus was once given to this vast beam of wood, of 100 or 150 feet in length and comparative weight, all that was requisite was to give it such continued motive force as to keep it in play, when its own impetus would of course gradually increase; and it would necessarily act with the force of its own natural weight, multiplied by a constantly increasing measure of velocity, upon the object on which it impinged. To this must be added that the ram being, in its most highly improved state, played in exact and regular time, it acquired a perfect vibratory motion itself; and its blows being directed continually on one precise spot, at regularly recurring intervals of time, a similarly regular vibration was communicated to the wall; which, constantly increasing with the constantly increased weight of the blows, a 2d wave being always put in circulation from the centre of the attack before the preceding wave had subsided, soon set the whole mass of masonry surging and swaying backward and forward in such a manner as would necessarily disintegrate its component parts and bring it in a mass of crumbling ruins to the ground. Its mode of operation was, therefore, entirely different from that of cannon shot, which merely crush, batter, and beat down the masonry against which they are hurled, by dint of sheer force; while the ram communicated a motion to the mass itself, on which it was played, which caused the defences to destroy themselves. The objections to its use were, that it could only be used at close quarters, where direct access could be had to the foot of the fortification which was to be beaten down, by bodies of men, who necessarily worked for the

most part in full view, and exposed to the missiles of the defenders, at an exceedingly short range. The former of these objections rendered it necessary, for the most part, to fill in the moats or ditches, in front of the works, by embankments or platforms, up which the engines were gradually advanced. The latter led to the construction of towers of planking, covered with raw hides, of many stories in height, rolling on wheels; in the lower stage of which the ram was slung so that the men who worked it could do so perfectly under cover, while the upper stages were filled with archers and slingers, whose duty it was to overpower the fire of the defenders. From the top of these machines a sort of bridge was also contrived, which could be lowered and hauled out with chains and pulleys so as to fall on the summit of the tower, or castle wall, and give free access to the assailants. These towers, which were the last improvement on the ram, were so arranged that they were not only fought but propelled by men, either within the structure, or placed behind it, in such a manner as to be protected by it from the shot of the enemy. They continued to be in use during all the middle ages, and were still effective, until ordnance was so much improved, that it could be discharged rapidly and with correct aim, which was not the case until several centuries had elapsed after the first introduction of gunpowder. Defective as the instrument appears, when compared with the terrific engines of modern war, it was generally successful.

BATTERSEA, a parish and sub-district in the county of Surrey, England, situated 4 miles S. W. of St. Paul's cathedral, and forming one of the suburbs of the metropolis. At the census of 1851, the sub-district of Battersea contained 0,560 inhabitants, and the parish 11,729. The area in statute acres of the sub-district is 2,848 acres. It is much occupied by market gardeners, who supply London with vegetables. t. John, Viscount Bolingbroke, was born and died there.

BATTERY. In field artillery, this expression means a number of guns, from 4 to 12, with the necessary horses, gunners, and equipments, and destined generally to act together in battle. The British and French have 6, the Prussians and Austrians 8, the Russians 8 or 12, guns to a battery. Field batteries are divided into light, heavy, and howitzer batteries; in some countries, there are, beside, mountain batteries. In describing a position for battle, the word battery is also used to indicate any spot where guns are placed. In siege artillery, battery means either any one of the lines of the fortress which is armed with guns, or else, and especially, a number of guns placed in line for the attack of a fortress, and covered by a parapet. The construction of this parapet, and the emplacements for the guns, are what is understood by the construction of a battery. With respect to their profiles, batteries are either elevated, half sunk, or sunken; with respect to their arma-

ment, guns, howitzer, mortar batteries; with respect to the shelter afforded, batteries with embrasures, barbette batteries (without embrasures), casemated batteries (covered in bomb proof). With respect to the purpose aimed at, there are dismounting batteries, to dismount the guns in one of the lines of the fortress, parallel to which they are constructed; ricochetting batteries, constructed in the prolongation of a line, and destined to enfilade it, the balls and shells just passing over the parapet and hopping along the line in low jumps; mortar batteries, to bombard the interior of the bastions and the buildings in the fortress; breaching batteries, to bring down the revetement walls of the scarp of the rampart; counter batteries, erected on the crown of the glacis opposite the flanks, to silence the fire of a flank which protects the ditch in front of the breach. Strand batteries are intrenchments thrown up on particular points of a sea shore to act against hostile men-of-war; they are either permanent, in which case they are generally constructed of masonry, and often casemated, with several tiers of guns, or temporary earthworks, mostly barbet the batteries to insure a wider sweep; in either case they are generally closed to the rear against a sudden attack by landed infantry. To construct an earthwork battery, the principal dimensions are traced, and the earth procured from a ditch in front or rear of the intended parapet. The outer slope of the parapet is left without revetement, but the interior slope and the cheeks or interior sides of the embrasures are revetted with fascines, gabions, hurdles, casks filled with earth, sandbags, or sods of turf, so as to retain the earth in its position, even with a steep slope. A *berme*, or level space, is generally left standing between the outer slope of the parapet and the ditch in front, to strengthen the parapet. A banquettes is constructed inside the battery, between the embrasures, high enough for a man to stand on and look over the parapet. An epaulment or parapet forming an obtuse angle with that of the battery is often constructed on one or both flanks, to protect it against flanking fire. Where the battery can be enfiladed, traverses or epaulments between the guns become necessary. In barbette batteries, this protection is strengthened by a further elevation of the traverses several feet above the height of the parapet, which elevation is continued across the parapet to its outer crest, and called a bonnet. The guns are placed on platforms constructed of planks and sleepers, or other timbers, to insure permanency of emplacement. The ammunition is kept partly in recesses under the parapet, partly in a sunken building of timber covered in bomb proof with earth. To shelter the gunners from rifle firing, the embrasures are often closed by blindages of strong planks, to open to either side when the gun is run out, or provided with a hole for the muzzle to pass through. The fire of the enemy is rendered innocuous by blindages of timbers laid with one end on the inner crest of the parapet, and sloping to the

ground behind. In batteries where howitzers are used, the soles of the embrasures slope upward instead of downward; in mortar batteries, there are no embrasures at all, the high elevation taken insuring the passage of the shell over the crest of the parapet. To give effective protection against the fire of heavy guns, the parapet should be at least 17 or 18 feet thick; but if the calibre of the enemy is very heavy, and the ground bad, a thickness of 24 feet may be required. A height of 7 or 8 feet gives sufficient protection. The guns should have a clear distance of from 10 to 14 feet; if traverses are necessary, the parapet will have to be lengthened accordingly.—FLOATING BATTERIES are vessels of war constructed very strongly, and heavily armed, designed to operate in smooth water for harbor defence, or in naval bombardments. There are yet no settled forms or plans of construction as for floating batteries. Sometimes they have been in the simple form of rafts, others have been built somewhat nearer the form of ordinary vessels, and frequently old ships of war have been strengthened and converted into floating batteries with excellent effect. To render them incombustible and invulnerable, has always been the aim of scientific and ingenious men. At the memorable siege of Gibraltar, by the combined forces of France and Spain, in 1782, 10 Spanish ships of war were converted into floating batteries of a very formidable character. The largest were about 1,400 tons burthen. Their sides were fortified 7 feet thick with junk, raw hides, and green timber, and on the top they were bombproof, with a descent that shells might roll off. They carried an aggregate of 142 guns, principally 32 pdrs., and were manned with 5,620 men. The vessels were all supplied with furnaces for heating shot, and the arrangements for extinguishing fires on board them were very complete. At the "grand attack," which took place Sept. 18, 1782, these floating batteries for many hours seemed to bid defiance to the heaviest ordnance, while the fire maintained by them was tremendous; but they were finally destroyed by hot shot.—New impulse has been given to the subject of floating batteries by the application of steam power to naval purposes, as by means of it they can be used with great certainty and effect. At the close of the year 1813, Robert Fulton presented to the government of the United States, plans for a war steamer or floating battery, named by him the *Demologos*. The project was zealously embraced by the executive, and resulted in the construction of the first war steamer ever built. She was called the *Fulton*, or *Fulton the First*, in compliment to the eminent man who designed her. She was propelled by a single wheel in the centre of the vessel, which, with the machinery and boilers, were protected from shot by sides of great thickness. Her principal dimensions were as follows, viz.: length 156 feet, breadth 56 feet, depth 20 feet; water wheel 16 feet diameter, engines 48 inches cylinder, 5

feet stroke, tonnage 2,425. Her average speed with and against the tide was stated at 5 knots, without the aid of sails, which, in that early stage of steam navigation, was considered a very satisfactory result. The war with England commenced before the *Fulton the First* was completed, consequently her powers as a floating battery were never tested.—Both England and France have within a few years past constructed a number of floating batteries, of which the *Erebus* (English) and *Destruction* (French) may be considered types.—The former was built by Napier and Sons at Govan, near Glasgow, in 1856. She is of iron, and is 126 feet in length by 50 feet beam, and 16 feet in depth. With the exception of being nearly flat, she is framed and plated like an ordinary vessel. Over the iron hull, for a distance of 13 feet from the top of the gunwale downward, she is sheathed with teak planking 6 inches thick, over which are wrought malleable iron plates 4 inches thick. Thus, with the inside plates which average $\frac{3}{4}$ to $\frac{1}{2}$ inch, the entire plating above the water line is $10\frac{1}{2}$ inches thick. She is armed with 30 8-inch guns, has complete gun and gun decks, and has 7 water-tight bulkheads up to the gun deck. She is propelled by a screw of 8 feet diameter; diameter of cylinder 32 inches, stroke 27 inches. The *Destruction*, built at Cherbourg in 1855, is 145 feet long by 42 wide, and is quite flat. Her sides are of wood 18 inches, of iron 4 inches, making a total thickness of wood and iron of 17 inches. Her steam power is equal to 150 horse-power, machinery and boilers being well protected. Floating batteries of this construction were used by the French at the combined attack on the Russian fortress of Kinburn, and one of them was struck by heavy shot 58 times in the hull without sustaining injury. The iron plates were dented to depths varying from 14 inches of an inch only.—The largest, and, as she probably prove, the most formidable floating battery yet designed, is now in construction at Hoboken, New Jersey, under a contract made by the late Robert L. Stevens with the war department in the year 1849. The actual construction of this vessel was commenced in 1856. The following are her principal dimensions: extreme length 415 feet, breadth 66 feet, depth 32 feet, 4 inches; displacement 12,584 tons, indicated steam power at 50 lbs. pressure equal to 8,624 horses, 10 large boilers, 8 direct engines, 45 $\frac{1}{2}$ inch cylinder, 3 $\frac{1}{2}$ feet stroke; propellers, 9 subordinate engines for various purposes, such as pumping, blowing, starting &c. The vessel is constructed entirely of iron. Her extremities are very sharp, and her gun when steaming at full power will beyond doubt be very great. Neither the armament nor the exact thickness of the protected portions of the vessel is fully determined. The design has cost much time and expense to an elaborate series of ordnance experiments, and entitles no doubt of the practicability of making her shot and shell proof. The defences will pro-

ably be composed of very thick forged iron plates, or thinner plates riveted together. She is intended to operate in the waters of New York bay and harbor, from Sandy Hook upward, and is now (March, 1858) about two-thirds completed. All her machinery and boilers and dependencies are finished and in place.

BATTERY, GALVANIC. See **GALVANISM**.

BATTERY, in law. See **ASSAULT** and **BATTERY**.

BATTEUX, CHARLES, a French writer on aesthetics, born May 6, 1718, died July 14, 1780. He made his debut in the literary arena in 1739, by a Latin ode in honor of the city of Rheims, where he had studied rhetoric. He was appointed professor at the *collège de Lisieux*, at Paris, and at the *collège de Navarre*, and subsequently Greek and Latin professor at the *collège de France*. In his writings on the fine arts (*Beaux arts réduit à un même principe*, Paris, 1746) and on philosophy (*Histoire des causes premières, exposé sommaire des pensées des philosophes sur le principe des êtres*, Paris, 1769), he opposed mannerism and conventionalities, and strove to bring art and philosophy back to a closer harmony with nature. This theory was diametrically opposed to the opinions of many of his academical friends, and led subsequently to the suppression of the chair which he filled at the *collège de France*. He was not a man of great depth of thought, but of indefatigable industry and of considerable learning. In 1754 he became member of the academy of inscriptions and belles-lettres, and in 1761, of the French academy.

BATTHYANYI I. KASIMIR, count, a Hungarian statesman, minister of foreign affairs during the revolution, born June 4, 1807, died in Paris, July 18, 1854. From his earliest childhood he took a lively interest in public affairs, and after having, as member of the Hungarian diet, opposed the Austrian government, he became, at the outbreak of the revolution, one of the prominent champions of Hungarian independence, devoting his wealth and influence to the promotion of this cause, and at the same time distinguishing himself on various occasions by his courage and skill on the battle-field. After having officiated as governor of various provinces, he became minister of foreign affairs, under the administration of Kossuth, and subsequently he shared his exile in Turkey until 1851, when he repaired to Paris, where he died. Although sympathizing with Kossuth in some respects, he differed with him in others, and addressed, in 1851, a series of letters to the "London Times," in which he reflected rather severely upon Kossuth's character as statesman and patriot. II. **LAZOS**, a member of the same family, born at Presburg in 1809, shot by order of the Austrian government, Oct. 6, 1849. He distinguished himself at an early period by his zeal in behalf of the independence of his country, and after waging a fierce war against the Austrian government, in the diet of which he was a member, he became afterward instru-

mental in promoting Kossuth's election to that assembly. For a short time in 1848 he officiated as prime minister of the revolutionary administration. Subsequently he endeavored to bring about a reconciliation between Hungary and the mother country, by proposing to the diet in Nov. 1848, that peace overtures should be made to Windischgrätz, who was advancing with the Austrian army toward Pesth. But the Austrian general refused to listen to the proposition, and the members of the diet and of the administration withdrew from Pesth at the approach of the hostile forces, removing the seat of the revolutionary government to Debreczin. Batthyanyi alone would not desert his post, and the consequence of his chivalric resolve was, that he was arrested Jan. 8, 1849, and on Oct. 5, following, sentenced by a court-martial, presided over by Marshal Haynau, to die on the gallows. Shrinking from such a degrading punishment he stabbed himself with a dagger, and inflicted so many wounds upon his neck that he could not be hung, and accordingly he was shot. He met his tragic fate, which enlisted much sympathy all over the civilized world, with heroism and resignation. The resentment of Austria extended also to his accomplished wife and his 3 children, who were expelled from the country, while his property was confiscated by the government.

BATTICOTTA, a village of Jaffna, Ceylon. It is the seat of a seminary established by American missionaries exclusively for native youths, and contains a Bible association. Pop. of parish and village, 6,841.

BATTIFERRI, LAURA, an Italian lady, celebrated for her beauty and learning, born at Urbino, in 1518, died 1589. She gained a high reputation by her poetical productions, which are imbued with a spirit of fervent devotion.

BATTLE. The encounter of two hostile bodies of troops is called a battle, when these bodies form the main armies of either party, or at least, are acting independently on their own separate seat of war. Before the introduction of gunpowder, all battles were decided by actual hand-to-hand fight. With the Greeks and Macedonians, the charge of the close phalanx bristling with spears, followed up by a short engagement with the sword, brought about the decision. With the Romans, the attack of the legion disposed in three lines, admitted of a renewal of the charge by the second line, and of decisive manœuvring with the third. The Roman line advanced up to within 10 or 15 yards of the enemy, darted their *pila*, very heavy javelins, into him, and then closed sword in hand. If the first line was checked, the second advanced through the intervals of the first, and if still the resistance was not overcome, the third line, or reserve, broke in upon the enemy's centre, or fell upon one of his wings. During the middle ages, charges of steel-clad cavalry of the knights had to decide general actions, until the introduction of artillery and small fire-arms restored the preponderance of infantry. From that time the superior num-

ber and construction of fire-arms with an army was the chief element in battle, until, in the 18th century, the whole of the armies of Europe had provided their infantry with muskets, and were about on a par as to the quality of their fire-arms. It was then the number of shots fired in a given time, with average precision, which became the decisive element. The infantry was drawn up in long lines, three deep; it was drilled with the minutest care, to insure steadiness and rapid firing, up to 5 times in a minute; the long lines advanced slowly against each other, firing all the while, and supported by artillery firing grape; finally, the losses incurred by one party caused the troops to waver, and this moment was seized by the other party for an advance with the bayonet, which generally proved decisive. If one of the two armies, before the beginning of the battle, had already taken up its position, the other attempted generally to attack it under an acute angle, so as to outflank, and there to envelope, one of his wings; that wing, and the nearest portion of the centre, were thus thrown into disorder by superior forces, and crowded together in deep masses, upon which the attacking party played with his heavy artillery. This was the favorite manœuvre of Frederic the Great, especially successful at Leuthen. Sometimes, too, the cavalry was let loose upon the wavering infantry of the enemy, and in many instances with signal success; but upon the whole, the quick fire of the infantry lines gave the decision—and this fire was so effective, that it has rendered the battles of this period the bloodiest of modern times. Frederic the Great lost, at Kolin, 12,000 men out of 18,000, and at Kunersdorf, 17,000 out of 80,000, while in the bloodiest battle of all Napoleon's campaigns, at Borodino, the Russians lost not quite one-half of their troops in killed and wounded. The French revolution and Napoleon completely changed the aspect of battles. The army was organized in divisions of about 10,000 men, infantry, cavalry, and artillery mixed; it fought no longer in line exclusively, but in column and in skirmishing order also. In this formation it was no longer necessary to select open plains alone for battle-fields; woods, villages, farm-yards, any intersected ground was rather welcome than otherwise. Since this new formation has been adopted by all armies, a battle has become a very different thing from what it was in the 18th century. Then, although the army was generally disposed in three lines, one attack, or at most two or three attacks, in rapid succession, decided its fate; now, the engagement may last a whole day, and even two or three days, attacks, counter-attacks, and manœuvres succeeding each other, with varying success, all the time through. A battle, at the present day, is generally engaged by the advanced guard of the attacking party sending skirmishers out with their supports. As soon as they find serious resistance, which generally happens at some ground favorable for defence, the light artillery, covered by skirmishers and

small bodies of cavalry, advances, and the main body of the advanced guard takes position. A cannonade generally follows, and a deal of ammunition is wasted, in order to facilitate reconnoitring, and to induce the enemy to show his strength. In the mean time, division after division arrives, and is shown into its fighting position, according to the knowledge so far obtained of the measures of the enemy. On the points favoring an attack, skirmishers are sent forward, and supported where necessary by lines and artillery; flank attacks are prepared, troops are concentrated for the attack of important posts in front of the main position of the enemy, who makes his arrangements accordingly. Some manœuvring takes place, in order to threaten defensive positions, or to menace a threatening attack with a counter-charge. Gradually the army draws nearer to the enemy, the points of attack are finally fixed, and the masses advance from the covered positions they hitherto occupied. The fire of infantry in line, and of artillery, now prevails, directed upon the points to be attacked; the advance of the troops destined for the charge follows, a cavalry charge on a small scale occasionally intervening. The struggle for important posts has now set in; they are taken and retaken, fresh troops being sent forward in turns by either party. The intervals between such posts now become the battle-field for deployed lines of infantry, and for occasional bayonet charges, which, however, scarcely at any time result in actual hand-to-hand fight, while in villages, farm-yards, intrenchments, &c., the bayonet is often enough actually used. In this open ground, too, the cavalry darts forward whenever opportunities offer themselves, while the artillery continues to play and to advance to new positions. While thus the battle is oscillating, the intentions, the dispositions, and, above all, the strength of the two contending armies are becoming more apparent; more and more troops are engaged, and it soon is shown which party has the strongest body of intact forces in reserve for the final and decisive attack. Either the attacking party has so far been successful, and may now venture to launch his reserve upon the centre or flank of the defending party, or the attack has been so far repulsed and cannot be sustained by fresh troops, in which case the defending party may bring his reserves forward, and by a powerful charge, convert the repulse into a defeat. In most cases, the decisive attack is directed against some part of the enemy's front, in order to break through his line. As much artillery as possible is concentrated upon the chosen point; infantry advances in close masses, and as soon as its charge has proved successful, cavalry dashes into the opening thus made, deploying right and left, taking in flank and rear the enemy's line, and, as the expression is, rolling it up toward its two wings. Such an attack, to be actually decisive, must, however, be undertaken with a large force, and not before the enemy has engaged his last reserves; otherwise, the losses

incurred would be out of all proportion to the very meagre results to be obtained, and might even cause the loss of the battle. In most cases, a commander will rather break off a battle taking a decidedly unfavorable turn, than engage his last reserves, and wait for the decisive charge of his opponent; and with the present organization and tactics, this may in most cases be done with a comparatively moderate loss, as the enemy after a well-contested battle, is generally in a shattered condition also. The reserves and artillery take a fresh position to the rear, under cover of which the troops are gradually disengaged and retire. It then depends upon the vivacity of the pursuit, whether the retreat be made in good order or not. The enemy will send his cavalry against the troops trying to disengage themselves; and cavalry must, therefore, be at hand to assist them. But if the cavalry of the retiring party be routed and his infantry attained before it is out of reach, then the rout becomes general, and the rear-guard, in its new defensive position, will have hard work before it unless night is approaching, which is generally the case. Such is the average routine of a modern battle, supposing the parties to be pretty equal in strength and leadership; with a decided superiority on one side, the affair is much abridged, and combinations take place, the variations of which are innumerable; but under all circumstances, modern battles between civilized armies will, on the whole, bear the character above described.

BATTLE, a market-town in Sussex county, England. The battle of Hastings, between William the Conqueror and king Harold II., which resulted in the overthrow of the Saxon power in England, was fought near the town of Battle, Oct. 14, 1066. On the spot where Harold's banner had been planted, William founded an extensive abbey, the magnificent gateway of which still remains. It contains a church in which are numerous interesting monuments and antique devices.

BATTLE-AXE (Fr. *hache d'armes*), an ancient military weapon of offence. It was unknown to, or at least unused by, the Greeks or Romans, and would seem to have been of oriental or north-eastern European origin. The Amazons are always described as armed with the double-headed battle-axe, *bipennis*, and, in the enumeration of the Persian host at Marathon, Herodotus mentions the Sacians as fighting with brazen shields and battle-axes. So, also, Horace speaks of the Rhæti and Vindelici, barbarians of the Pannonian Alps, as armed from the remotest times with Amazonian axes. The axe does not, however, appear to have become a general instrument of war until the descent of the Scandinavian nations, all of whom, Saxons, Danes, and Northmen, used some modification of this terrific weapon, which alone was capable of crushing in, or cleaving asunder the linked steel mail, which defied the sword blade or the lance's point. The axe of the Saxons, who were a nation of foot soldiers,

soon assumed the form of the bill, glaive, or *gisarme*, which, with the bow, became the national weapon of the English infantry. The Normans, who were especially cavaliers, retained the old form of the battle-axe, with a heavy axe-blade forward of the shaft and a sharp spike behind it, beside a point perpendicular to the handle, which could be used for thrusting at an enemy. The battle-axe was carried slung on one side of the pommel of the man-at-arms' saddle, as was the mace at the other; it was of great weight, often 10 pounds or over, and could be used either as a missile, to hurl which with accuracy both skill and power were needed, or, oftener, as a hand-to-hand weapon at close quarters.

BATTLE BRIDGE, a suburb of London. The name is said to be derived from an engagement fought there between the troops of Boadicea and the Romans.

BATTLE OREEK, a village in Calhoun county, Michigan, at the junction of Battle creek with the Kalamazoo river. It is in the midst of a productive country, in the vicinity of quarries of superior sandstone, and contains a number of woollen factories, flour mills, saw-mills, machine shops, an academy, and several churches. Pop. in 1850, 2,000.

BATTLE FIELD, a parish of England, county of Salop. It derives its name from the battle fought there in 1403, by Henry IV. and the prince of Wales, against the earl of Northumberland. In this contest the royal troops were victorious; Hotspur, the son of Northumberland, was killed, and his ally, the earl of Douglas, taken prisoner.

BATTLEMENT, a wall on the top of a building, pierced with embrasures. Battlements were formerly used for defence, but are now generally employed for ornamental purposes. The term sometimes denotes the whole length of this indented wall or parapet, but its application is perhaps more properly restricted to the higher portion of the wall, as distinguished from the embrasure.

BATTOGES, **BATTACKS**, the name given to two thin sticks, formerly used to punish criminals in Russia. The punishment was administered by two persons, one of whom sat upon the head and the other upon the feet of the criminal, who received the blows on his naked back. This mode of punishment was abolished by Catharine II.

BATTUE, a mode of shooting, introduced into England from the continent of Europe, from Germany more especially, where it has long been very popular. It consists in placing the party of shooters at posts, and driving the game up by means of beaters, arrayed at equal distances, and moving in regular order almost contiguous to one another, through the whole tract of woodland country, which is to be hunted. In some cases the array of beaters is circular, and this is generally the case in Germany, where the game taken and killed by this method, consists for the most part of quadru-

peda, deer, roebucks, wolves, boars, foxes, hares, and rabbits; which are forced, by this means, in great flocks, to a common centre, where they are shot down by hundreds, and even by thousands, by marksmen, who never stir from the spot at which they are posted, and who sometimes are seated at their ease in pavilions prepared for the occasion, and are provided with men to load their arms as fast as they are discharged, so that they have nothing to do but to take aim and fire.—In the English mode, where pheasants are the principal game, with an admixture of woodcocks, hares, and rabbits, the shooters form an advanced line, each gun about fifty yards from his next neighbor, directly abreast each of the other, and at about the same distance in advance of the beaters, who come in a second line much more closely arrayed, the men within 6 or 10 feet of each other, beating the bushes with sticks, shouting, and whistling, so that all the game, winged or quadruped, must go forward. The rule is, never to fire a shot except directly forward; since one in any other direction would be dangerous. Both lines advance at a regular pace, sometimes ordered by the sound of a bugle—halting and moving simultaneously. As they traverse the woods, all the shots obtained are at hares, rabbits, and woodcocks; for the pheasants invariably run on to the end of the drive, where they are stopped by nets, until the party comes up, when they rise in huge clouds, and are slaughtered in mass, several hundreds being often killed by a few guns, in the space of a few minutes.

BATU KHAN, Mongol sovereign of Kaptshak, died 1256, grandson of Genghis Khan. He inherited from his grandfather (1228) the provinces of Kaptshak, Allan, and Rous, as well as Bulgaria. He acknowledged the supremacy of Oktai as great khan, and accompanied him in his expedition against China, and, on the command of his superior, he swept over Russia, Hungary, Poland, and Dalmatia. He defeated Henry, duke of Breslau, at Wahlstadt (1241), and Bela IV., king of Hungary (1242), who fled into Dalmatia. Batu followed him thither, and ravaged Dalmatia, but retreated the next year. He held Russia for 10 years, but was compelled to abandon his designs on Constantinople. In religion he became a convert to Grand Lamaism.

BATU, Pulo (Malay, rock islands), a group of 4 islands and 89 islets, lying off the W. coast of Sumatra. The equator crosses the northern extremity of the largest, Masa (time). The other principal ones are named Pingi (fair), Taluk (cove), Bala (a troop). Area 290 sq. m.; pop. 5,000. The inhabitants have much intercourse with the island of Pulo Nias, distant N. 53 miles, and it is interesting to observe the friendly relations existing between these semi-civilized people, differing in manners, and customs, and language. Frequent intermarriages are tending to fuse the two people together, and indeed, at this day, many of the Batu people call themselves Orang Nias. Although governed to

some extent by Malays, they have resisted Islamism, and believe in good and evil spirits, according to the simple mythology of the ancient Malays, whom they invoke or deprecate by harmless conjurations and simple offerings of the fruits of their labor. The Batas cultivate rice, understand the forging of iron, and have domesticated the buffalo, hog, and common poultry. But their degree of civilization is much inferior to that of the people of Pulo Nias. The tripang and turtle fisheries of the coasts are in the hands of a few enterprising Bughis from the island of Celebes, and all the interior trade is managed by a few Chinese. All English and German maps and charts of the present day repeat the mistake of Valentyn's erroneous chart of 1726, and, still later, of Marsden's, in 1811, in representing Pulo Batu as a single island. It is singular that there has been to this day less information with regard to the geography of this group, and others on the W. coast of Sumatra, full of an interesting people, and in the neighborhood of European settlements that have existed for 200 years, than with regard to the most worthless, uninhabited snow wastes of the arctic regions. They did not produce pepper nor spices, the sole stimulus to European enterprise in the eastern islands.

BATUTA, Izz, a celebrated Moorish traveller and theologian, born at Tangier in 1302, died about 1378, whose religious aspirations drew him to all places consecrated by sacred traditions. This was the original impulse which, blended with a romantic and adventurous disposition, led him to travel extensively over Egypt, Persia, Syria, Arabia, China, Tartary, Hindostan, the Maldivé islands, the Indian archipelago, central Africa, and Spain. The account of these travels is replete with interest, especially from the fact that they were undertaken at the time when the Tartars were making progress in Asia Minor, and the empire of Hindostan was verging toward its final subjugation to the Mogul dynasty. Batuta's original manuscript has not yet been discovered, although supposed to have been preserved at Cairo, or at Fez, to which latter place he returned in 1358, after the completion of his travels, for which he set out toward the year 1325. Hitherto fragments only of his manuscript have been epitomized by a Moor of the name of Mohammed ibn Tazri el Kelbi, and extracts of this epitome were made by another Moorish admirer of Batuta, named Mohammed ibn Fal el Baituma. This "Extract of an Epitome," as it is called, passed into the hands of the celebrated traveller Burckhardt, who bequeathed it to the English university of Cambridge. Another copy of this extract came, through some person in Cairo, to Jena, where the first attempt was made by Mr. Koesgarten, in his Latin itinerary of Batuta's travels in Africa, Persia, Tartary, and the Maldivé islands, and by Mr. Apetz in his itinerary of his journey to Malabar, to draw the attention of oriental scholars to the mass of interesting information

collected by the Moorish traveller. In May, 1820, an account taken from the extract appeared in the "Quarterly Review." Eventually the Arabic professor at Cambridge, the Rev. Samuel Lee, resolved upon an abridged translation of the extract, from the original MSS. in the archives of the university, and this translation appeared in 1828, under the auspices and included in the publications of the Oriental translation fund, and is the most admirable version extant on the subject. An account from the extract appeared also in W. D. Cooley's "History of Maritime and Inland Discovery," vol. i. A French version of Batuta's travels was published in 1858 (Paris, 4 vols. 8vo). The real name of the Moorish traveller was Mohammed ibn Abd-allah el Larrati, but he is generally known under the name of Ibn Batuta, or, as the French spell it, Batouta.

BATZ, a village of France, in the department of Loire Inférieure, 56 miles W. from Nantes. The inhabitants, about 3,000 in number, who are chiefly engaged in the working of salt marshes, from which immense quantities of salt are annually produced, have preserved a peculiar and fantastic costume, and curious usages. There is here a remarkable church of the 17th century, with a square granite tower 200 feet in height.

BAUCIS, and PHILEMON, her husband, Phrygians, entertained Jupiter and Mercury when they, while travelling in disguise, had been refused hospitality throughout their route. Subsequently, while a deluge was caused to destroy the inhospitable people, Baucis and Philemon were saved from destruction. They entreated the gods to transform their cottage into a temple, in which they could act as priest and priestess, a request which was granted. When they expressed a desire to die together, Jupiter gratified their wishes by changing them simultaneously to trees. The names of Baucis and Philemon are used to signify faithful and true married people.

BAUDELOOQUE, JEAN LOUIS, a skilful French surgeon and accoucheur, born in 1746, died in 1810, author of *L'Art des accouchements* and other works on diseases of women and children. Napoleon appointed him to attend Maria Louisa during her confinement.

BAUDIER, MICHEL, a French historiographer, born in Languedoc, in 1589, died in 1645, celebrated for his numerous writings on Turkish, Chinese, Flemish, and French history. His most interesting work is his "Biography of Cardinal Ximenes." His most curious production is his "History of Romieu, Chief Minister of Raymond Bérenger, count of Provence." Baudier is supposed to have derived the idea of writing his history from Dante.

BAUDIN, NICOLAS, a French sea-captain and botanist, born on the island of Ré, in 1750, died Sept. 16, 1808, entered the merchant navy at an early age, and in 1786, went on a botanical expedition to the Indies, sailing from Leghorn under the Austrian flag, with a vessel under

his own command. His collections in this expedition, and in a second expedition which he made to the West Indies, were presented by him, on his return to France, to the government, which promoted him to the rank of captain, and sent him, in 1800, with 2 corvettes, on a scientific mission to Australia. He failed to penetrate the interior of that country, but made many interesting observations on the coast. Half of his men died of fatigue and exposure, and he himself soon breathed his last at the Isle of France, on his return. Péron accompanied him and wrote an account of the voyage.

BAUDIN DES ARDENNES, CHARLES, a French vice-admiral, born at Sedan, July 21, 1784, died in Paris, June 7, 1854. In 1812, as lieutenant in command of the brig *Rénard*, accompanying an expedition of 14 sail, provided with munitions from Genoa to Toulon, he conducted his convoy safely into the harbor of St. Tropez, though continually pursued by English cruisers; but his flag-ship was immediately after attacked by an English brig, which he disabled after a desperate conflict, in which 14 of his 64 men were killed and 28 wounded, including himself. After the restoration, in 1816, he resigned, and entered the merchant service. With some of his friends, he conceived the bold plan of delivering Napoleon from St. Helena. After the July revolution he reentered the navy. In 1838, he was promoted to the rank of rear-admiral, and received the command of the expedition against Mexico, consisting of 23 ships. His efforts to effect an amicable settlement with the Mexican government proving fruitless, he bombarded, Nov. 27, 1838, the fortress of San Juan de Ulloa. The fortress surrendered on the following day. Baudin treated the inhabitants with great consideration, and permitted 1,000 Mexican soldiers to remain in the city to maintain order, but on the Mexican government sending reinforcements, he was compelled to resort again to hostilities, which, on Dec. 5 of the same year, resulted in the disarming of Vera Cruz, in the complete defeat of the Mexican army, and in the restoration of peace between the two countries. Baudin was now promoted to the rank of vice-admiral, and in 1840, was sent as military and diplomatic plenipotentiary to the republic of Buenos Ayres, and intrusted with the chief command of the French fleet in the South American war. On his return to France, he was for a short time minister of marine under Louis Philippe. In March, 1848, he was appointed commander of the French fleet in the Mediterranean, and remained stationed for some time during the Italian outbreak off the Neapolitan and Sicilian coast. On May 15, 1848, when Naples was threatened by the *lazzaroni* and soldiery, the presence of vice-admiral Baudin's fleet kept the rioters in check. Again, on Sept. 8, the French fleet, in conjunction with that of Great Britain, protected Messina against the designs of Filanghieri. Baudin was also successful in recovering, at Naples and Tunis, sums due to French residents.

In July, 1849, the vice-admiral withdrew from active service.

BAUDISSIN. I. OTTO FRIEDRICH MAGNUS, a Schleswig-Holstein general, born July 5, 1792, at Rantzau, took a prominent part in the late war with Denmark, and distinguished himself on various occasions by his skill and bravery, as well as by his moral influence upon the spirit of the soldiery. Although invited in 1851, after the withdrawal of Gen. Willisen, to become commander-in-chief of the army, he retired from active service and left the country, discontented with the turn which affairs had taken after the interference of Austria. II. WOLF HEINRICH FRIEDRICH KARL, brother of the foregoing, born at Rantzau, Jan. 30, 1789, was in early life connected as secretary with various Danish legations, but having given umbrage to the Danish government by his Schleswig-Holstein affinities, he was for a short time placed under arrest. On recovering his liberty he devoted himself to travelling and to literary pursuits, and finally, in 1827, took up his abode at Dresden, where he became chiefly noted as a Shakespearian scholar. After having translated Shakespeare's Henry VIII., he brought out a great number of plays of the great English dramatist, in conjunction with his friend, the celebrated Tieck.

BAUDOT. I. AUGUSTE NICOLAS, a French general, born at Rennes, Feb. 15, 1765, died at Alexandria, March 29, 1801. He served under Moreau and Kleber in the Egyptian campaigns, and was mortally wounded before Alexandria. II. MARC ANTOINE, a member of the French national convention, died at Liège in Belgium, in 1880. In the case of Louis XVI., he voted for his death and execution in 24 hours. He was sent on a mission to Toulouse, which had risen against the convention. On his proposition the church bells were converted into cannons. On his return he was complimented by the convention and the Jacobin club. He was then sent as conventional commissioner to the army of the Rhine. At the battle of Kaiserslautern, he led a column of soldiers himself, and at the tribune defended Gen. Hoche from the attacks of St. Just. He regretted the events of the 9th Thermidor and the fall of Robespierre; he was accused, arrested, and imprisoned, in the castle of Ham, but was set at liberty by the amnesty of the 8d Brumaire, year IV. He was banished at the second restoration, and withdrew to Switzerland, and afterward to Liège, where he lived in obscurity until his death.

BAUDOUR, a town and commune of Belgium, in the province of Hainaut, 6 miles W. of Mons. Unworked coal-mines and phosphate of iron in great quantity, are found in its vicinity. Pop. 2,577.

BAUDRAIS, JEAN, a French *littérateur*, born at Tours, Aug. 14, 1749, died May 4, 1832. He began life at Paris by writing *L'Allégresse villageoise*, in honor of the dauphin's marriage, 1781. In middle age we find him a furious terrorist and enemy of Louis XVI., and one of

the witnesses to the last testament of that unhappy monarch. He was employed in various magisterial posts, during the republic and the consulate, and eventually at the colony of Guadeloupe, whence he was removed to Cayenne. As he was one of those republicans who would not take the oath of allegiance to the emperor Napoleon, he was removed from his office, and emigrated to the United States of America, where he passed 18 years, living by manual labor. On his return to France in 1817, he confuted a biographer who had made him die in 1801. He also attempted dramatic writing. His chief work is *Essai sur l'origine et les progrès de l'art dramatique en France* (3 vols., Paris, 1791), which was, however, never completed.

BAUDRAND, MARIE ETIENNE FRANÇOIS, HENRI, comte de, a French general, born Aug. 21, 1774, at Besançon, died at Paris, Sept. 10, 1848. He served in the army of the Rhine during the whole republican period. He was on Murat's staff in the Neapolitan campaign, 1806-1807. He was engaged in the Ionian islands from 1808 to 1813. In 1815, Napoleon made him general of the army of the north. He took part in the battle of Mont St. Jean, and did not quit the army of the Loire until its disbandment. He served under the restoration and the monarchy of July, by which, in 1832, he was elevated to the peerage, and in 1837 he was appointed tutor to the comte de Paris.

BAUER, BRUNO, born Sept. 6, 1809, at Eisenberg, in the duchy of Saxe-Altenburg, Germany, the birthplace of many distinguished men, is the most audacious of all historical critics of the Bible and of positive religion in general. Educated in Berlin, he became in 1834 a teacher at that university; in 1839 he was transferred to Bonn, where, in 1842, he was deprived of the permission to give public instruction. He then returned to Berlin and devoted himself entirely to historical and critical publications. The results at which he claims to have arrived are: that the gospels, as well as the Acts of the Apostles and the principal epistles of Paul, are not historical records but free inventions of poetical genius, like romances and novels of our times, written during the 2d century with a view to account for the rapid spread of Christianity at a time when the original history of its establishment had already fallen into obscurity; that religion is to be abolished, and science and ethics founded on the free development of the human mind are to be substituted; and that all attempts at apologizing for the scientific deficiencies of Christianity and revealed religion in general, as for instance the Hegelian philosophy, are futile. Bauer was originally a Hegelian philosopher of the old school, and an adversary of Strauss's "Life of Jesus." In 1835 he criticized this work with an air of great superiority, proposing to reconcile the free action of reason with the Christian revelation, which, in common with Hegel, he regarded as a gradual self-revelation of human reason. This position he abandoned

in 1839, and after several minor writings, published his "Critiques of the Evangelical History of St. John" (Bremen, 1840), "Critiques of the Evangelical Synopticians" (2 vols., Leipsic, 1840), and in 1850, his "Critiques of the Gospels and History of their Origin" (2 vols.), the *Acta Apostolorum*, and the "Critiques of the Letters of St. Paul." Of his minor works are to be mentioned *Die Judenfrage* (Brunswick, 1843), in which he protested against the emancipation of the Jews, whom he considers as the cause of the ruin of Poland and Hungary, and as the prospective cause of the political ruin of Europe. They are to emancipate themselves by abandoning their Jewish clannishness, religion, and trading in money, and becoming imbued with the principles of general humanity. His *Allgemeine Literaturzeitung* (Charlottenburg, 1843-'44), his works on the history of the French revolution, on German history since the French revolution, and on the causes of the futility of the revolution of 1848-'49, are elaborate productions. They have contributed much toward the dissolution of those vague liberal ideas, and utopian axioms of popular enlightenment, which made shipwreck of the German revolutions. He has served his own party, the democracy, by criticizing it most severely; while he has maintained that the masses are entitled to perfect human happiness, arguing that every political and social system which does not elevate all men to the highest possible degree of mental and moral education, to perfect humanity and mutual equality, is more or less tyrannical, inconsistent, and absurd. In thus taking side with the masses he has never flattered them.—EDGAR, brother of the former, born 1821 in Charlottenburg, near Berlin, first studied theology, then jurisprudence, and on account of a confiscated publication, "The Contest of the Critics with Church and State," was condemned in 1848 to the state prison for 4 years. He was a co-worker with his brother in some of his publications and author of several books of the same sentiments, of which *Die Geschichte der constitutionellen Bewegung im südlichen Deutschland während der Jahre 1831-'84* (3 vols., Charlottenburg, 1845-'46), and *Bibliothek der deutschen Aufklärer* (5 vols. Leipsic, 1845-'47), may be mentioned.

BAUER, GEORG LORENZ, born Aug. 14, 1755, studied theology in Altdorf, and was minister and professor of theology in Nuremberg, Altdorf, and Heidelberg. He died in the last-named city, Jan. 12, 1806. Bauer belongs to the rationalist school in German theology, and owes his importance among his contemporaries to his hermeneutical and exegetical writings, by which he introduced into theology the principle that the Bible, like the works of the old classics, must be interpreted by grammatical and historical considerations, and not with reference to theological doctrines. He was among the first to elucidate the dogmatic opinions of the different biblical writers, and to show the differences between them. He also shows the dif-

ferences between the opinions of the biblical writers on the one hand, and the creed of the Lutheran church on the other, and was the first to write what in German theology is called a biblical theology, that is, a systematic exposition of the Christian dogmas as they are contained in the Bible, and in each biblical book in particular. Among his writings are *Hermeneutica Sacra V. T.* (Leipsic, 1797); *Hebräische Mythologie des Alten und Neuen Testaments* (Leipsic, 1802-'03), *Biblische Theologie des Neuen Test.* (Leipsic, 1800-'02). Bauer was a great linguist, particularly in the oriental languages, and is the author of a German translation of the Arabian history of Abulfaraj.

BAUER, KAROLINE, a German actress, born at Heidelberg, in 1808. Prompted by a love for the stage, she made her début at Carlsruhe in 1822, and in 1825 appeared at the royal theatre in Berlin, where she immediately became a favorite with the public. In 1826, she contracted a so-called left-handed marriage with Prince Leopold of Saxe-Coburg, and abandoning the stage lived in London and Paris as Countess Montgomery till 1831. Leopold then having become king of the Belgians, and having betrothed himself to the princess Louisa of France, she freely dissolved the tie which united her to him, resumed her former name and profession, and has since then had engagements in Germany and Russia.

BAUER, WILHELM, formerly a non-commissioned officer in the Bavarian army, served as a volunteer in the revolutionary war of the German duchies against Denmark in 1850. There he invented a diving-boat, the model of which he offered unsuccessfully to several German governments. In England he became disgusted with the "circumlocution office," and, in 1855, went to Russia, where the admiralty cheerfully accepted his offer. He constructed a diving-ship, and, on June 24, 1856, he, with a naval officer, 8 seamen, and 1 machinist, went down to the bottom of the sea near the harbor of Cronstadt. A letter, written by him to his parents, from the bottom of the sea, was published as a great curiosity. The ship with her crew of 11 persons remained below the surface for 8 hours, during which time she moved with perfect ease in all directions, forward and backward, upward and downward, in a straight line as well as obliquely. Further experiments were crowned with complete success. On August 29, 1856, an experiment was made of exploding ships by means of Bauer's diving-boat, and the result surpassed all expectations. The boat is propelled by an Archimedean screw. Steam is generated by means of a burning material which does not emit any smoke. This material is the secret of the inventor, as also an apparatus to keep the air clean. The upward and downward movements are effected by the application of an air-pump. The petards by which ships are exploded are ignited by a galvanic battery within the boat. Three ships may thus be exploded simultaneously, while the boat it-

self is out of danger. Bauer has also constructed sub-marine gunboats, from which—incredible as it may appear—guns are fired in a vertical, horizontal, or oblique direction. Bauer has been engaged permanently for the Russian service, and an annual salary of \$7,000 for life has been allowed to him. It is said that he is employed in building a complete submarine flotilla for the Russian government.

BAUG, a town of Hindostan. In its vicinity are some remarkable caves, in which are temples.

BAUGÉ LE VIEIL, a French village, department of Maine-et-Loire, celebrated in history for a battle fought between the English and the French in 1421. The former were totally defeated and their leader, the duke of Clarence, was killed. The ruins of an old castle that formerly belonged to the dukes of Anjou may yet be seen here.

BAUHIN. I. JEAN, a French physician, born at Amiens, died in 1582. He became a convert to Protestantism in 1532, after having read the Latin translation of the New Testament by Erasmus. Although physician to the princess Margaret, sister of Francis I., he was persecuted and fled to the Swiss city of Basel. He became proof-reader in the printing establishment of Jean Froben. II. JEAN, elder son of the preceding, a doctor of medicine and naturalist, born at Basel, 1541, and died in 1618. In 1560 he went to the university of Tübingen, and was a pupil of the botanist Fuchs. He accompanied Conrad Gesner in his botanical excursions. He travelled extensively over central Europe, making collections everywhere. Duke Ulrich, of Würtemberg, made him his court physician, where Bauhin lived for 48 years. Bauhin cultivated, in the ducal gardens of Mtimpelgard, a great number of plants then recently introduced into Europe.

BAULOT, ISAAC, a French naturalist, born at La Rochelle, in 1657, died Sept. 24, 1712; travelled extensively, and made known the extent of his investigations in various papers communicated to his colleagues; also left a work on the organ of hearing in the tortoise.

BAUMAN ISLANDS, an inconsiderable cluster of islands in the South Pacific ocean, lying just east and north of the Friendly islands. They were discovered by Bauman in his voyage round the world, in 1722. The inhabitants are white, but somewhat sun-burned, of a gentle and humane disposition and hospitable. The largest of these islands is about $4\frac{1}{2}$ miles average diameter.

BAUMANN'S CAVERN, in the Hartz principality of Blankenberg, on the left bank of the Bode, about 5 miles from Blankenburg. It is a commodious cavity in a limestone mountain, divided into 6 principal apartments and several smaller ones, which are all profusely studded with stalactites. The name comes from a miner, who in exploring it lost his way, during 2 days, when he again reached the entrance.

BAUME, NICOLAS AUGUSTE DE LA, marquis of

Montrovel, and a marshal of France, born 1686, died Oct. 11, 1716. His courage was proverbial, and he had braved death in many a battle-field. His superstition was so great, that on the contents of a salt-cellar having been accidentally thrown upon him, he instantly exclaimed, "I am a dead man!" and actually expired from the terror with which it inspired him.

BAUME, ANTOINE, French chemist, born at Senlis, in France, Feb. 26, 1728, died Oct. 15, 1804. At the age of 24 he was appointed professor of chemistry to the pharmaceutical college of Paris. He was a good practical operator, and established a manufactory for sal-ammonia, thereby rendering France independent of Egypt, whence previous supplies of the article had been procured. He improved the manufacture of porcelain, of scarlet dye for the Gobelin tapestry, invented the aerometer known by his name, and greatly simplified and cheapened many processes in the useful arts. In 1778 he was elected member of the *Académie des sciences*, and retired from business with a fortune in 1780. The revolution came, and swept away his property. He re-commenced business as a manufacturer, and somewhat retrieved his broken fortunes. He published several treatises on chemistry and pharmacy, some of which have been translated into English, and contributed largely to the *Dictionnaire des arts et métiers*, which he had projected.

BAUMEISTER, JOHANN WILHELM, a German veterinary surgeon, born April 27, 1804, at Gmünd, died Feb. 8, 1846, at Stuttgart; studied at Augsburg and Munich, and to some extent subsequently excelled in the art of painting animals. He eventually, in 1839, became the principal professor at the veterinary academy of Stuttgart, and published valuable manuals on the subjects of the diseases of animals, besides various works on cattle, horses, &c.

BAUMGARTEN, a village of Austria, near Vienna. It is the seat of a castle belonging to the prince of Esterhazy.—Also the name of a number of villages of Germany.

BAUMGARTEN, ALEXANDER GOTTLIEB, German author, born at Berlin, June 17, 1714, died at Frankfurt on the Oder, where he was professor of philosophy, May 26, 1762, was the founder of the science of aesthetics in his works: *De nonnullis ad Poema pertinentibus* (Halle, 1785), and *Æsthetica* (3 vols., Frankfurt, 1750-'58, incomplete), which are written in the spirit of the Wolfian philosophy. It is true that a long time before Baumgarten, attempts were made at giving a scientific analysis of the nature of the beautiful, and the principles of art; Aristotle and Horace gave artistic rules and observations which hold good to this day, but they do not, like Baumgarten, attempt to show how the mind produces the notions of art and beauty, and to reduce those notions to an accurate system. He maintains that the mind has a double faculty of perception, the higher a logical one, which forms reasonable notions of

tablishing the truth, while the lower or æsthetic perceives immediately, without conscious reasoning, the elements of beauty. The æsthetic philosophy of the present age has long since done away with this view; but it is something to have made, in a clear and acute manner, the first step toward the foundation of one of the most difficult, intricate, and inexhaustible of all branches of philosophy.

BAUMGARTEN-CRUSIUS, DETLEV KARL WILHELM, a German philologist, born at Dresden, Jan. 24, 1786, died May 12, 1845, studied theology and classical literature at Leipsic; for many years, connected as teacher and rector with the schools of Metseburg, Dresden, and Meissen; and distinguished for the reforms which he introduced in the schools by his personal example, by his political efforts in the Dresden municipal assembly, of which he became a member in 1830, and also by his writings. The leading idea of his system was to rule the pupils rather by an enlightened spirit of kindness and trust, than by severity of discipline. At the time of the German war of independence he roused the enthusiasm of the German youth by his patriotic publications. To the stores of classic German literature he contributed pocket editions of many classic writers, and brought out a new edition of Müller's *Homörischer Vorschule*. He also published a new biography of George Fabricius, beside miscellaneous, ethical, religious, and travelling sketches.

BAUMGARTNER, ANDREAS VON, an Austrian statesman, born Nov. 23, 1793, at Friedberg in Bohemia; connected for many years with the teaching of mathematics and physics, especially after 1823, at the university of Vienna, until illness forced him to relinquish his academical pursuits. Subsequently he became connected with the direction of the imperial porcelain, tobacco, and other manufactures in 1841, with the establishment of electric telegraphs, and at the end of 1847 with the chief management of the construction of railways. After the revolution of March, 1848, he occupied for a third time a seat in the Austrian cabinet as minister of the mining department and of public works, and was afterward connected with the exchequer, and in 1851 a prominent participator in the tariff congress at Vienna, where he defended the policy of the government against the claims and attacks of the manufacturers. On May 23, 1851, he succeeded Baron Bruck as minister of finance and commerce, industry and public works, and retained these offices until 1855, when Bruck resumed his seat in the cabinet as finance minister. Baumgartner is president of the Austrian academy of sciences. The annual salary of \$1,300 formerly paid to him as vice-president of the same institution was spent in meteorological observations. His principal works are on mechanical science applied to art and industry. His most popular work is the *Naturlehre*, which has passed through 8 editions, and is now to be found in all the schools of Austria.

BAUNACH, a Bavarian town. A grotto in its neighborhood, called the grotto of the Magdalene, is much visited by pilgrims.

BAUR, FERDINAND CHRISTIAN, professor of theology at Tübingen, born June 21, 1792, the founder of the Tübingen school of theology, which applies to the critical examination of the New Testament rather the test of historical philosophy than that of the bare facts of history itself, and whose writings may be classed first among the productions which grew out of this construction upon the New Testament, as his works on the epistles of St. Paul (1835), and his critical examination of the Evangelists, including St. John, St. Luke, St. Mark, and St. Matthew (1847). In these he endeavors to establish the fact that many of the writings of the Apostles are rather to be taken as indications of the spirit of their times, than as oracular theological declarations. The other class of his writings falls under the head of history of religious dogmas, as "The Christian Genesis, or Christian Religious Philosophy" (1835), "The Christian Doctrine of Atonement" (1838), "Of the Trinity and the Incarnation" (1841-4), and the "Historical Manual of Christian Dogmas" (1847). He has frequently been accused of sympathy with the system of Hegel, but he has only employed Hegel's philosophical analysis of the inner life of history, without identifying himself with the theological deductions at which Hegel aims. In the result to which his labors have led him, he claims to have found a counterpoise against the negative philosophy of Strauss. His chief aim is to plant the banner of theology upon the broad platform of the philosophy of history. Among the disciples of his school are many writers of eminence, such as Zeller, Schwegler, and Köstlin.

BAURE, **BAURUS**, or **BAURES**, a river of Bolivia, about 300 miles long. It rises in Lake Guazamire, takes a N. W. course, and empties into the Guapore.

BAUSSET, LOUIS FRANÇOIS DE, a French cardinal, born at Pondicherry in 1748, died in France, June 21, 1824. He was sent to that country when still very young, received ecclesiastical instruction at the seminary of St. Sulpice, entered sacred orders, and passing rapidly through the various grades, was promoted to the episcopacy in 1784. The states of Languedoc sent him as one of their deputies to the meetings of notables, held at Versailles in 1787 and 1788. When the constituent assembly undertook to alter the church establishment, Bausset was one of the signers of the protest presented by the clerical members against the civil constitution imposed upon them. He afterward emigrated, but went back to Paris in 1792, when he was soon incarcerated. He was restored to liberty on the revolution of the 9th of Thermidor. Having obtained all the manuscripts left by Fénelon, he wrote his biography, published in 1808 and 1809, which was received with marked favor. His *Histoire de Bausset*

was less successful than that of Fénelon. On the second return of the Bourbons, he entered the chamber of peers, was "by order" admitted to the French Academy in 1816, was created a cardinal in 1817, then commander in the order of the Holy Ghost, and minister of state.

BAUTAIN, Louis, a French philosopher and theologian, born at Paris, Feb. 17, 1796. When only 20 years old, he was appointed to the professorship of philosophy at Strasbourg, where he rapidly acquired considerable fame by his varied learning, fluency of speech, and tendency to mysticism. Admitted to sacred orders in 1828, he at once became director of the seminary and a canon of the church. In 1830 he resigned his professorship, but was, eight years later, called to the presidency of the literary faculty of Strasbourg, in which capacity he continued until 1849. He then became superintendent of the college of Juilly, which post he gave up when, a little later, he was called by M. Sibour to the curacy of the archbishopric of Paris. Amid all the duties of his various offices, M. Bautain has found time to write several books or pamphlets on religious subjects.

BAUTZEN, or BUDZESIN, a town of Saxony, capital of upper Lusatia, on the Spree, 81 miles E. N. E. of Dresden. It has a cathedral, owned in common by the Catholics and Protestants, the two congregations worshipping in different parts of it; and a population of about 12,000. The battle of Bautzen was gained May 21 and 22, 1813, by Napoleon over the allied Prussians and Russians. The army of Napoleon was much superior in numbers, amounting to 148,000 men; but the allies, who had recently lost the battle of Lützen (May 2, 1813), and did not wish to demoralize their new recruits by continual retreat, and who were sure at least to check the progress of the French, determined to risk an engagement. On the first day, Napoleon got possession of the city, but was unable to force the allies to retreat till late in the second day, which they did in such order as to prevent him from gaining any important advantages from the victory. The loss of the French was about 8,000 killed, and twice that number wounded, and the loss of the allies was somewhat less.

BAVA, GIOVANNI BATTISTA EUSEBIO, a Sardinian general, born at Vercelli, in Aug. 1790; passed the early part of his life in the service of France, and distinguished himself on various occasions, especially in 1806, at the siege of Saragossa. After the battle of Toulouse he left the French for the Sardinian service, when he gradually rose to the highest rank in the army, and that of baron in the lists of the nobility. In 1839 he was military commandant of Turin, in 1847 governor of the province of Alessandria. During the first campaign in 1848, he rendered eminent services to Charles Albert, and the brilliant victories at Goito and at Somma-Campagna, were due to his genius and valor. During the reverses which afterward overtook the Sardinian army, he succeeded by his energy in keeping up the courage

and the discipline of his soldiers, but disapproving the policy of the king, he retired from active service, after having taken a part in the defence of Milan. Under the present king, Victor Emanuel, he was appointed inspector-in-chief of the army, and for a short time in 1849 he officiated as minister of war.

BAVARIA (Ger. *Bayern*), a kingdom within the German confederation; area 29,637 sq. m., pop. in 1855, 4,541,556, nearly three-fourths of whom are Catholics, while the remainder, with the exception of 56,000 Jews, and 8,000 of the minor Christian sects, are Lutheran Protestants. The kingdom was erected in 1805 by Napoleon, who conferred the royal dignity on the elector of Bavaria for his services against the emperor of Austria. It consists of 2 isolated portions: the eastern, between lat. 47° 30' and 50° 1' N. and long. 9° and 14° E.; bounded N. by Hesse Cassel, Saxe-Meiningen, Saxe-Coburg-Gotha, Reuss, and Saxony; E. and S. by Austria; W. by Würtemberg and Baden, and Hesse Darmstadt; the western, known as Rhenish Bavaria or the Palatinate, between lat. 48° 57' and 49° 50' N. and long. 7° 5' and 8° 27' E.; bounded N. by Rhenish Prussia and Hesse Darmstadt; E. by Baden, from which it is divided by the Rhine; S. by France, and W. by Rhenish Prussia. The kingdom and population are distributed in 8 circles or provinces, as follows:

Circles (Kreise).	Area in sq. m.	Pop., Dec. 31, 1846.	Pop., Dec. 31, 1852.	Pop., Dec. 31, 1855.
1. Upper Bavaria (Ober- bayern).....	6,614	705,544	734,581	744,151
2. Lower Bavaria (Nied- erbayern).....	4,118	548,709	549,596	554,013
3. Palatinate (Pfalz).....	2,226	608,470	611,476	587,334
4. Regensburg (Oberpfalz und Ratisbon).....	4,198	467,606	468,479	471,906
5. Upper Franconia (O- berfranken).....	2,226	501,163	499,709	493,913
6. Middle Franconia (Mit- telfranken).....	2,798	527,866	533,530	533,587
7. Unterfranken and A- schaffenburg.....	3,604	502,080	503,745	509,076
8. Swabia (Schwaben und Neuburg).....	3,858	558,486	565,783	561,576
Total....	29,637	4,504,874	4,559,452	4,541,556

The population is almost exclusively of Germanic origin, only a few hundred thousand inhabitants of the Fichtel mountains being of Slavonic descent; while there are about 3,500 Frenchmen in the Palatinate. Three original Germanic tribes constitute the population: the Boioarians or Bavarians, between the Allgäu Alps and so-called Franconian Alps, and the rivers Lech, and Inn, and Salzach; the Franconians or Franks, between the Franconian Alps, the Thuringian and Bohemian mountains, and in the Palatinate, and a branch of the Swabians bordering on Würtemberg. Of these tribes the Boioarians appear throughout ancient and modern history as the least gifted of all the branches of the German family. They have never been celebrated for commerce, industry, literature, or art; agriculture and cattle-raising being their favorite occupation up to

this day. The Franconian tribe have, of all, made the greatest figure in history, being the founders of the Franconian empire and of modern France, and until this time the most active politicians of Germany. They exhibit the largest proportion of German inventors, city founders and industrialists. The Swabian tribe is the most poetical, philosophical, and literary of all the Germans. While the Boio-arians are almost exclusively confined within the present kingdom, the Franconians and Swabians are spread far beyond its frontiers, the first along the middle Rhine, Moselle, Meuse, and Scheldt; the second on both banks of the Neckar and over the Black mountains.—The climate shows about the same average temperature as the north-western coast of Germany, although the country is from 4 to 6 degrees of latitude nearer the equator, and about the same as Bergen in Norway and the eastern coast of Scotland (47° F. being the mean temperature), although situated from 5 to 10 degrees more southwardly than these countries. Partaking more of the peculiarities of a continental climate, the summers are, of course, warmer, and the winters severer than in the above countries, and admit of the culture of the grape. The southernmost portions of Bavaria being at the same time the highest above the level of the sea, and the northernmost in general the lowest, the climate is nearly the same all over the kingdom. The southern frontier is formed by the Allgau Alps, reaching to an elevation of over 9,000 feet; thence northward we find a plateau descending slowly to the plain of the Danube, which is from 1,000 to 900 feet above the sea. This is an almost exclusively agricultural region, with excellent pastures along the Alpine regions; with considerable, but little developed, mineral treasures (salt enough for export, iron, coal, 8 quicksilver mines, and a little of almost every other mineral); with few cities, of which Munich, Augsburg, and Passau are important; with a bad system of education; with large forests, picturesque mountain lakes, and some extensive marshes and heaths lower down; with much beggary, intemperance, and almost a third of all births illegitimate (in Munich even one-half); with a rich soil, but a slovenly and backward agricultural system; and with a few excellent manufactories in Munich and Augsburg. The Catholic religion is predominant.—The region thence northward between the Danube and Main, which, since 1840, have been connected by the Ludwig canal, is hilly; the Franconian Alps, not over 2,000 feet high, running about half way between those rivers, and being in the east connected with the Fichtel mountains, of a little over 8,000 feet of elevation, and the Bavario-Bohemian mountain forests. This tract is very fertile in the valleys, and poor in the mountains, but everywhere prosperous from the energy, enterprise, and activity of its population, of which one-third and more live in cities; Nuremberg, Anspach, Fürth, Bamberg, Baireuth, Regensburg, Nörd-

lingen, Würzburg, Aschaffenburg, Ochsenfurt, Rothenburg, Donauwörth, and many others, being lively, populous, and in part celebrated of old, full of industry, commerce, and education—although the latter is more hindered than fostered by the government. The population of this region is about half Protestant, the Catholics generally inhabiting the fertile valleys, the Protestants the poorer uplands and industrial cities. The agriculture is progressive; beside the common cereals, wine, hemp, flax, hops, dye stuffs, tobacco, first-rate fruit, wool, excellent beef cattle, fowls, beeswax and honey, are largely produced. The mineral resources are here very limited, the mountain formation being to a large extent carbonate of lime and quarry sandstone, and producing scarcely any thing but the celebrated lithographic stones of Solnhofen, the mineral waters of Kissingen and Brückenau, and some very fine coal.—From the Main to the northern frontier, which in some places reaches to the crest of the Thuringian mountain forest, the Rhön and Spesshart mountains, the land is elevated, though nowhere much over 2,000 feet, with fertile valleys sending their waters down to the Main, and only the Saale, belonging to the system of the Elbe, breaking through the mountains to the northward. This region partakes of the general character of that south of the Main, but is less populous, and has fewer cities, and Protestantism everywhere in the minority.—The Rhenish or lower Palatinate beyond the Rhine is a low and very fertile plain along that river. The western portion, however, is mountainous, and rises to 2,000 feet; it is a very rich tract, with extensive agricultural and industrial products, few cities and many towns; wine, tobacco, salt, and coal furnishing the principal articles of export. Among the articles of export from the kingdom in general, are Bavarian beer, brewed to the highest perfection in Munich, Nuremberg, and Bamberg, and consumed in vast quantities in the country itself; the plumbago crucibles of Passau, exported all over the world; the products of the glass factories, rivalling those of Bohemia; the optical instruments from Fraunhofer's establishment in Munich, probably the most renowned in the world; wooden tools and toys from Nuremberg and vicinity; the gold, silver, and plated composition fabrics of Augsburg and Nuremberg; the gypsum and marble of Franconia; live cattle, leather, hides, flax and hemp, hops, and dye stuffs. Much is done at present to stimulate the extensive production of textile and iron fabrics. The total exports exceed the imports by some millions of florins.—There are the following railroads in the kingdom: Hof-Nuremberg, Augsburg-Munich, from the Saxon frontier to the capital, 250 miles; Augsburg-Lindau, to the south-western frontier, 50 miles; Augsburg-Ulm, 50 miles; Bamberg-Würzburg, 70 miles; Ludwigshafen-Bexbach, in the Palatinate, 20 miles; while some hundred miles more are projected.—Of the 8 universities of the country, those of Munich and

Würzburg are Catholic, the latter celebrated for its medical faculty, and Erlangen is Protestant. There are, also, many technical academies under the superintendence of the Catholic clergy. At Munich a painting academy, a school of sculpture, and an architectural academy, owe their establishment to the late king, Louis. The number of newspapers in Bavaria was 178, in Jan. 1851, of which 58 were strictly devoted to politics. The bulk of these appear in Franconia and the Palatinate, and at the present time the total number of journals is supposed to be not far from 200. There are 12 journals published at Munich alone. At the head of the German press stands the *Augsburger Allgemeine Zeitung*, which appears at Augsburg, and enjoys world-wide reputation. The Bavarian journals next in importance are the *Neue Münchener Zeitung* (the official organ of the government), the *Nürnberger Correspondent* (one of the oldest journals in Germany), the *Frankische Kurier* (a journal conducted with great ability and published at Bamberg), the *Neue Würzburger Zeitung*, and the *Neue Speyerische Zeitung*, published at Spire, the capital of Rhenish Bavaria.—Bavaria is a constitutional monarchy, the constitution dating from May 25, 1818, having been to some extent revised in 1848. There are 2 legislative chambers, over whose acts the king has an absolute veto. The popular representatives have no right to refuse taxation; every male inhabitant of over 25 years of age, is a voter. There is a standing army of 92,000 men in time of war, and of 60,000 in time of peace, and every male inhabitant, the clergy excepted, is liable to become a soldier until he has reached his 50th year, after which he belongs for 10 years to the militia; 6 fortresses of little mark defend the country. As we have stated, the kingdom is politically divided into 8 administrative circles or provinces. The public debt amounts to over 200,000,000 florins; the revenue to about 89,500,000 florins; the expenditure to about the same, though for a few years past there has been a deficit of some 1,500,000 florins.—The oldest inhabitants of Bavaria proper were of Celtic origin, called Boii by the Romans, and expert in the fabrication of bronze tools and weapons, but never politically advanced enough to form a state. They were driven out by Roman conquest between 110 B. C. and A. D. 14, and seem to have emigrated to Gallia, while their country became a Roman colony and province under the name of Vindelicia and Noricum, Regia Castra (Regensburg) being the capital and the chief stronghold against the Germans. During the great migration of nations in the 4th and 5th centuries, the Romans were driven out, and the country peopled by the Boioari, a confederation of several minor German tribes, among which may have been the Heruli, Rugi, Turcilingi, and Quadi, whose earlier residence probably was Bohemia and Moravia. The order of the day was, all over Germany, the formation of confederations of the small tribes for the purpose of better

resistance against the Romans, or to attack their empire. The Boioarians were independent under their own chosen dukes from the family of the Agilolfingians until A. D. 630, and their duke Thassilo I. is mentioned in 590, as being at war with the Slavonians on the eastern frontier, who at this time had begun to fill up the whole eastern half of Germany evacuated by German emigration into the Roman empire. It is not well established at what time the Boioarians were united with the Franconian empire. They received their first written laws from the Franconian King Dagobert, about 630, and revolted 2 or 3 times against the Franks, but unsuccessfully. Franconian missionaries among whom St. Emmeran at Regensburg, and Rupert at Salzburg, are mentioned, converted the population to Christianity without much difficulty shortly after 640, and 100 years later Boniface divided the whole of the Bavaria church into 4 bishoprics: Salzburg, Regensburg, Passau, and Freisingen. The Agilolfingians lost their ducal dignity by rebellions against Charlemagne in 777, and from that time the independent dukedom ceased to exist. Charlemagne's sons and descendants ruled Bavaria as kings during the division of the Franconian empire until the Carolingian house died out in 911. From this time until 1150, when the count palatine Otto von Wittelsbach became duke, Bavaria was engaged in endless interior dissensions, often 2 dukes at a time claiming the crown arms in hand, while the wars with the Avars and Magyars, and later the crusades decimated the population. In 955 the Magyars were at last defeated on the plains of the Lech and driven back forever into Hungary. The descendants of Otto von Wittelsbach, with short interruptions, governed the country to this day. One of them, Ludwig der Bavarier, was German emperor from 1314 to 1347. After 1290, a lateral line of this house possessed the Rhenish Palatinate, embracing at that time a portion of the present grand duchy of Baden with its capital Mannheim, and this line entered upon the dukedom of Bavaria in 1777, when the main line died out. In 1805 the electoral dignity was conferred upon the Palatinal as well as the Bavarian line, and as we have stated above, in 1805 the elector became king. By their fidelity to the Catholic pope and their conspiracies against the German empire with the French kings and Napoleon, the Wittelsbach line managed to acquire a great extent of territory, which was also augmented by marriages, purchase, and inheritance to the present size of the kingdom. Among all the rulers of Bavaria and the Palatinate, there is scarcely one who was really a great man; indeed, none of them was even above mediocrity, except Ludwig, the emperor; and even he who knew how to make himself loved and revered by the people, except Maximilian I. (from 1799 to 1825), who in many other respects was a very defective ruler. Ludwig's successor (to 1848), must be mentioned

great patron of the arts, which he fostered by the expenditure of immense sums of money. This prince also supported the Greek insurrection against the Turks, and secured the independence of Greece, and succeeded in having his son Otho appointed king of that country.—On the other hand, the popular history of Bavaria is highly creditable to the Franconian and Swabian tribes. The Boioarian appears in history only twice to advantage, during the peasants' war in 1524 and '25, when Salzburg was one of the centres of the armed revolution of the peasants, and a short time after the reformation, when the same portions of the country became so earnestly addicted to the Protestant faith, that 2 centuries of oppression could only lead to a great emigration of the Salzburg Protestants (in 1782) to various portions of Prussia and to America, where they settled in the Carolinas, Georgia, and Virginia. The Franco-nians, however, after their great feat of founding the Franconian empire, and giving to Germany her later political existence, frontiers, and constitution, became the founders of cities with their free citizens, commerce, trades, and arts all along the Main, Rhine, and their tributaries. When after the crusades the great commercial intercourse between the Orient and Occident led to the stupendous growth of Venice, Milan, and Genoa, the enterprising citizens of Augsburg and Nuremberg became the commercial mediators of the world, exchanging the produce of the northern and western countries with those of the Orient, and amassing immense wealth. Not satisfied with trading, they became manufacturers, opened mines, built roads, made inventions, and fostered the fine arts. The Swabians were not behind in this mighty progress, and while the Franconians invented looms, pocket watches, the alloying of bronze, glass painting and grinding, cannon founding, and printing, the Swabians successfully cultivated the highest style of Gothic architecture, and excelled in poetry. The Fuggers in Augsburg, the Tuchers in Nuremberg, the Birkheimers and other patrician citizens were renowned all over the world; emperors and princes married their daughters; they were at the head of every industrial enterprise, and a new artistic and scientific culture sprang up around them. The Franconian school of painters produced men of the rank of Albert Durer, Lucas Cranach, and Holbein; bronze founding was developed into a new plastic art, in which Peter Vischer excelled. The Minnesingers and later the Mastersingers had their original home in Franconia and Swabia. Here originated the idea of a confederation of the free commercial cities all over Germany in the celebrated Hansa, which by their standing armies broke down the predatory nobility, ruled the northern seas, and antiquated the old feudal institutions. Here in the peasants' war, the first great combined revolutionary movement of the German peasants against the authority of the nobility and clergy took place, and the first declaration

of human rights was offered, a movement which might have been successful, and would have led to a reorganization of the German empire and national unity and independence, but for the opposition of Luther and his co-workers in the reformation. Here the reformation found its southernmost stronghold. Many of the great battles of the 30 years' war were waged in this part of Bavaria, as those of Augsburg (1631) and Fürth (1632). This war, however, and still more the discovery of the new commercial route to India and of America, which transferred the world's trade to the Atlantic shore, broke down the greatness of the free cities of Franconia and Swabia. However, Nuremberg, true to her ancient spirit, was the first city of Germany to build a railroad, though only of 5 miles' length, to Fürth, in 1838. In the revolution of 1848 and '49, a marked contrast was to be observed between the energetic Franconians and the slow movements of Bavaria proper. The Rhenish Palatinate was in open rebellion for the new German constitution of Frankfurt on the Main and even for republicanism, and would have been lost to the Bavarian kings, but for Prussian intervention. Since then Bavaria has followed the general conservative and absolutist tendencies of European politics.—A new and comprehensive work on this country is in course of preparation by the most eminent Bavarian scholars under the auspices of the present king, Maximilian II.

BAVAY, a canton, commune, and town of France, in the department of Nord. The town occupies the site of the ancient *Bagacum* or *Baganum*, a military post of considerable importance under the Romans, and until the end of the 4th century, the capital of the Nervii. The remains of an aqueduct, an amphitheatre, and some ruined fortifications, are among its relics of the past, and it is the point of union of 7 still existing Roman roads, called the *Chaussées de Brunohaut*. Pop. of the canton, in 1856, 14,489, of the town and commune, 1,660.

BAVOUX, FRANÇOIS NICOLAS, a French jurist, born at St. Claude, department of Jura, died at Paris, Jan. 28, 1848. Under the empire, he became law professor at Paris, and a judge of the tribunal of the Seine. He was at first retained in this double capacity on the return of the Bourbons, but having been bold enough to profess liberal principles, his lectures were interdicted, and he was called to answer for his doctrines before a superior court. He was acquitted, and the liberal party then elected him to the chamber of deputies. When the revolution of July, 1830, occurred, he was among its most ardent promoters, and accepted for a while the post of prefect of police, which he soon exchanged for the more quiet office of councillor in the court of accounts. The final result of the revolution was to him a bitter disappointment, and when re-elected by the department of Jura, he took his seat among the opposition deputies, who attempted to resist the encroachments of the executive power. He did not live long

enough to see the overthrow of Louis Philippe. —His son, EVARISTE, born in 1809, was a member of the constituent assembly in 1848, and is now a deputy in the *corps législatif*. He has published: *Philosophie politique, ou de l'ordre moral dans les sociétés humaines*, which has been favorably mentioned in a report to the academy of moral and political sciences; *Alger, voyage politique et descriptif dans le nord de l'Afrique*; *Etudes de législation*. These books appeared before the last revolution. Since then he has written some political pamphlets in accordance, of course, with Louis Napoleon's imperial policy.

BAWEAN (Malay, *babi*, hog, Javanese, *bawé*, hog's abode), an island about 50 miles N. of Java and Madura, lat. 5°49' S., long. 112°44' E., area 490 square miles. The soil is of volcanic formation, like that of Java, and equally productive, and yet, according to a late report submitted to the chamber of deputies at the Hague, by the minister of colonies, the island is obliged to import annually from Java and from the neighboring island of Bali, about 3,000 tons of rice for the consumption of the inhabitants, who are chiefly fishermen and traders. The island is remarkable as being probably the most densely populated territory in the world. A census taken in 1845, gave 29,121 souls; and in 1855, the population was estimated at 33,500, or about 800 to the square mile. The inhabitants speak a dialect of Madura, and are undoubtedly descended from colonists from that island. The Baweans are a simple, industrious people; and crimes against person and property are said by Dutch authorities to be almost unknown among them. Their chief exports are small horses for Java, and tripang for China; they take in exchange, tools, unwrought iron, and coarse domestic cloths. The wild hog is abundant in the island, but not a single carnivorous animal is to be found except the tanggalung, a species of civet cat. Hot springs abound in the island. It is one of the few rare spots where the valuable teak tree grows. There is a roadstead in a small bay, on its southern coast, near the town Sangyapura (city of imagination). There are 6 insignificant islets off the coast.

BAWR, ALEXANDRINE SOPHIE COUREY DE CHAMPGRAND, baroness de, a French dramatist and novelist, born at Stuttgart, in 1776, of French parents. Her life has been marked by many vicissitudes, through which she has passed courageously and honorably. She was thoroughly instructed in all the branches of female education, and received lessons in musical composition from the composer Grétry. She married, when still young, the count de St. Simon, the founder of the Saint Simonian school, who was then preparing for his great mission. To live a simple life in accordance with his young wife's wishes and taste, was far beneath the dignity of the would-be prophet; and thus soon finding that the first man in this world could not properly remain tied to a woman who had no pretension to be the first of her sex, he sued for a

divorce, which was granted; and singularly enough, the husband wept bitterly on the rendering of the judgment which set him free. Left to her own resources, Alexandrine tried to make a living by composing songs (*romances*) which were then in great demand; she afterward tried the drama under the assumed name of M. François, and some of her plays were very favorably received. After a while, she married the wealthy baron de Bawr, with whom she lived for a few months in happy retirement; but a frightful accident carried him off suddenly; and a little later her fortune having been lost by unhappy circumstances, the young widow had again to depend on her pen. She set to work and wrote some novels and plays which brought her both money and fame. The most successful among the latter was a lively little comedy in 1 act, *La suite d'un bel maquis*, which is still performed occasionally. Her novels, *Le novice*, *Raoul ou l'Enide*, &c. which are written in a subdued style, possess such a charm that they commanded attention even during the effervescence of the romantic school, and may be read now with pleasure.

BAXTER, ANDREW, a metaphysician and philosopher of Scotland, born at Aberdeen in 1686 or 1687, died at Whittingham, in 1741. He was educated at King's college in Aberdeen. His occupation in life seems to have been that of a teacher, principally, of private pupils gentlemen of rank, with whom he frequently travelled on the continent, spending some years in the city of Utrecht in Holland. His associations, studies, and various journeys, gave him not only elegance of manners and familiarity with various languages, but a large acquaintance with the motives and principles of action which he was able to turn to use. His greatest work, first published in quarto, in 1730, and afterward in 2 vols. octavo, in 1737, is entitled, "An Inquiry into the Nature of the Human Soul; wherein the immateriality of the soul is evinced, from the principles of reason and philosophy." This treatise, though highly recommended by such a writer as Warburton, is not but little known and rarely referred to. Singular theories found some antagonists, and the author was led, many years after, to detach himself in an "Appendix" to the first part of his treatise. In this treatise some opinions are advanced which were more thoroughly expounded by Priestley. Baxter's idea of dreams is peculiar. He maintains that these are caused by the presence and influence of other spirits on the soul of the sleeper, and are not a part of our own mental operations. In a later work, published through 3 editions, entitled *Metaphysical Cosmotheoria puerilis*, he attempted to solve questions of science, and adapt them to the capacity of children and youth. Some mistakes in the work were at once detected, and corrections were made in the 3d edition, which was issued in 1765, after the author's death. The vols. duodecimo. Though his published works were few, Andrew Baxter has a just claim

honorable mention among the philosophers of the Georgian era. He left behind him many unfinished treatises. As a student he was indefatigable, spending whole nights in literary toil. His disposition was gentle, his spirit was reverent, and his habits were frugal. Baxter was married in 1724, and had for issue a son and 8 daughters. His wife survived him for several years.

BAXTER, EDWARD, a Manchester merchant, born 1779, died 1856, noted for the philanthropy of his life and for his generous support of the cause of civil and religious liberty. At the crisis of the reform bill he brought up the memorable address of the citizens of Manchester to Lord Grey, and urged upon the duke of Wellington the necessity of reform. The first seat in parliament for the new borough of Manchester was offered to him in reward of his services, but he proposed to substitute the name of his friend Mark Phillips for his own, and preferred to keep aloof from the parliamentary arena.

BAXTER, RICHARD, an eminent English non-conformist clergyman and theological writer, born Nov. 12, 1615, at Rowton, a small village of Shropshire, died in London, Dec. 8, 1691. His means of early education were limited, and the austere morality of his home led him to dislike the license of the masters under whom he studied. His early bias was toward religious meditation and to exercises of piety; and this bias was confirmed by his research in the library of Mr. Wickstead, chaplain of the Ludlow council.

A brief trial of life at court only fixed his resolve to become a preacher; and after a short interval of teaching, during which his preparatory studies were diligently prosecuted, he was ordained at Dudley, at the age of 23. Two years later, he became the minister of the important town of Kidderminster, where he was held in high esteem by the most eminent citizens, notwithstanding his openly expressed objections to taking the ecclesiastical oath. In the civil wars which soon after broke out, he took sides with the parliament, was appointed to be captain in Whalley's regiment, and led for nine years an unsettled life. The physical weakness which separated him from the army probably saved him from the extreme views of loyalty to which many of his party were drawn.

He maintained his loyalty, had no sympathy with the regicides, denounced the assumption of supreme power by Cromwell, and advocated the return of Charles II. to his father's throne. For his services to the cause of legitimacy, he was made one of the chaplains of the restored monarch, and was offered a bishopric, which his conscientious scruples about conformity compelled him to decline. His favor with the king, however, could not shield him from persecution; and though honored with some important ecclesiastical trusts, he was endangered and troubled by these very honors. He

sometimes prohibited from preaching, actions of heresy were multiplied against him, and he was ruined in property by the financial mea-

ures of the government, and excessive intellectual labor so wore upon a feeble and nervous frame, that his life was one of almost constant suffering. After numerous arrests, he was brought at last, at the age of 70, before the tribunal of Judge Jeffreys, and received from that magistrate the treatment and the sentence which criminals in that court usually found. A fine was imposed far beyond his ability to pay, with the alternative of perpetual imprisonment. The crime was that he had permitted some anti-episcopal sentiments to appear in his paraphrase of the New Testament. After a confinement of months, he was released by the Catholic king, and was able to pass the five remaining years of his life in comparative peace, though frequently distressed by bodily pain. Baxter, though a royalist in his principles, and the advocate of an established church, was yet, in his tastes and temper, sternly Puritan. He represented the religious spirit of the Puritan body better than many of its most active leaders. He was a foe to all dissoluteness of life, to all arbitrary measures, to every kind of tyranny and oppression. He loved freedom, and if he advocated monarchy, it was a constitutional and just, not a wilful and capricious monarchy. He sought always to check rebellion; yet does he deserve the reproach upon his grave-stone, that "he was the enemy of kings and bishops, and the very bond of rebels." His principles of opposition to absolute power were uncompromising, and neither fear nor favor could bring him to yield them. He was stoical in his firmness, and his spirit remained the same through all his changes of fortune. Friendship could not turn him from duty, nor could his love of peace set aside his greater love of truth. He was a mediator among the sects; yet his views were so sharp and positive, that he became, in spite of his desire, the founder of a school of theology, which still continues to bear his name. The Baxterians of England occupy the middle ground between the established and the Puritan church, borrowing from the first the doctrine of broad and general grace, and from the second the doctrine of special election. As a sect, however, they have nearly disappeared. Baxter's love for theological subtleties, not less than his restless promptness in taking hold of every subject of religious concern, involved him in perpetual controversy. He had many and noble friends, but he made a multitude of enemies, both in church and state. Some blamed him for his moderation; others abused him for his rigid scruples. No great man of his time has been more variously judged, more warmly loved, or more fiercely hated. A comparison of authorities warrants, nevertheless, a favorable verdict. Claimed by Puritan writers as almost a saint, Baxter has found equally warm eulogists among the writers of the English church. All now consent that he was essentially a noble man. He was a most industrious and indefatigable author. His works, in every form, from bulky folios to pamphlets, number not less than

168 titles. A large proportion of these are treatises in solid and substantial volumes. Most of them are written in English; yet the *Methodus Theologia*, issued in 1674, showed that the deficiency in his youthful training had not hindered him from acquiring a fair mastery of the Latin tongue. The "Christian Directory," a folio which contains his system of practical theology, was too obscure and dry to keep a permanent fame, and is now rarely consulted by scholars. His treatises on "Universal Concord" and "Catholic Theology" failed to produce that harmony among differing sects which was the excellent purpose of their publication. His arguments against the Antinomians, in his various controversial treatises, are less thorough than those of Oudworth, though not less sharp; while the work on the spiritual world, as manifested in the phenomena of witchcraft and strange apparitions, is as full of entertaining stories as the nearly contemporary work of Dr. Increase Mather, on "Remarkable Providences." Baxter was a fearless metaphysician; yet his ascetic tendencies made him, like most of the divines of his time, credulous of strange tales, and ready to believe marvels. Eminent friends shared with him this fondness for supernatural stories, and Sir Matthew Hale, whose impartial justice Baxter has not too highly praised, and whose devout conversation on theological themes was so sweet and "edifying" to one whom the courtiers hated, is remembered as the judge who pronounced sentence upon witches at Bury St. Edmund's. The three works by which Baxter is best known, are his "Saints' Everlasting Rest," his "Call to the Unconverted," and his autobiography, published five years after his death. The first two of these works have a popularity which remains still undiminished; and if their annual sale does not reach the ancient surprising mark of 20,000, they have become standard tracts in every practical series, and are acceptable to a circle of readers far wider than the sect of their author. Their deep seriousness, their solemnity of warning, their mingling of mystic fancies with simple counsels, their appeal alike to fear and to imagination, their intense sincerity, have given them a place among books of devotion which their mere literary merits would hardly have secured. In the matter of style and scholarship, Baxter's "Saints' Rest" is not to be compared with Taylor's "Holy Living and Dying." Yet the work of the chaplain of Charles the Profligate has fifty readers where the work of the chaplain of Charles the Martyr has but one. The "Call to the Unconverted" is often associated with the later work of William Law. But the spirit of the two works is unlike, and their merits are unequal. Baxter's book has more of Puritanism, Law's book more of mysticism. The one is better adapted to the hymns of Watts, the other to the hymns of Wesley. Doctrinally, these celebrated works of Baxter are more liberal than the treatises of divinity which he wrote; though it must be

remembered that intercourse with the world, misfortune, and meditation, gradually diminished the rigor of his orthodoxy, so far as to expose him to grave suspicions of heresy. Some have called his notion of the Trinity Sabellian. It is certain that he held views, in his latter years, concerning the use of the Scriptures and the saving value of practical righteousness, which were a departure from the strict letter of the creeds. He admitted to opponents the chance of salvation, and he exalted charity above dogmatic soundness. The posthumous "Narrative of his own Life and Times," which Dr. Calamy afterward abridged in his life of Baxter, is in reality the most valuable work which remains to us of all his large library of original productions. It shows the gradual change which came over his mind, the softening of his prejudices, the enlargement of his charity, and the truly amiable heart which was hidden beneath his grave exterior. It enables one, too, to understand the spirit and customs of the time; and some of its pictures of life in country and city are hardly surpassed in wit and quaintness by the rhymes of Hudibras. Its periods are more finished than those of Baxter's theological writings, and its practical wisdom is less cramped by a technical dialect. The portrait of Richard Baxter in the library of Dr. Williams, in London, is a true index of the spirit of the man; sweetness and resolution, sadness and constancy, a smile on the lips, thoughtfulness in the eyes, simplicity in costume, pale features shaded by raven hair, all indicate a soul in which the soft and strong elements of religious character were beautifully blended, and approve that praise of Bishop Wilkins, that Baxter, "if he had lived in primitive days, would have been one of the fathers of the church."

BAXTER, WILLIAM, a distinguished philologist and archaeologist, born in 1650, at Llanugan, in Montgomeryshire, died in London, May 31, 1728. Like his uncle, Richard Baxter, he had few advantages of instruction in his youth; and until the age of 18, when he entered the Harrow school, he knew no language but his native Welsh. But assiduous study and a singular aptitude for philological inquiries soon remedied this early want, and in a few years he was noted for his accurate knowledge, not only of the ancient dialects of Britain, but of the Greek and Latin classics. The profession of schoolmaster, which he chose, favored his natural taste; and while performing the duties of this office, first in a private school at Tottenham, in Middlesex, and afterward as head of the Mercers' school in London, he published most of his works. These consist of a Latin grammar, published in 1679; two editions of Anacreon, published in 1695 and 1710; two editions of Horace, the first appearing in 1701, and the second in 1725, after his death, and a glossary of British antiquities, of which the first edition was issued in 1719. After his death, the letter "A" of a great work on Roman antiquities was published, under the title of *Reliquiæ Baxter-*

iana. With the exception of the grammar, all these works were in octavo form. His editions of the classics were accompanied with critical notes and explanations, which, while they gained for him in some quarters great credit and praise, drew down upon him also much sarcasm and ridicule. Later critics do not sustain the high opinion which Gesner expressed of Baxter's Horace, and the erudition which Bentley admired in it could not blind Wieland to the bad taste of the annotations. A subsequent editor turns back upon Baxter the severity with which he had treated Faber's Anacreon. Baxter's pedantry is less annoying in his works on British antiquities, where he was less exposed to the criticism of rivals. He was able in this work to correct many errors and supply many defects in the works of previous writers. He was fond of tracing names to their origin, and was proud to derive his own name from "Bæcester," a baker, the sign, among the early Britons, of high nobility. The fortune which he received from his uncle was sufficient to enable him to prosecute his linguistic studies very far; but this was almost the only thing which he borrowed from that eminent divine. The tastes and spirit of William Baxter were very different from those of Richard Baxter. The temper of the lover of pedigrees and titles, whose studies were upon such poets as Anacreon, Horace, Juvenal, and Persius, was much more suited to the court of the second Charles, than the straight morality of the non-conformist chaplain.

BAY, in geography, is an arm of the sea extending into the land. It is generally applied to smaller bodies of water than gulfs, of the same general geographical character—though the terms gulf and bay are used sometimes interchangeably, and much to the confusion of geographical science. The word is of Saxon origin, and signifies an angle. It should properly be applied only to arms of the sea which are widest at their departure from the main line of sea coast, or mouth, while gulf should be applied to such bodies of water as the gulf of California, whose width is nearly the same throughout a great part of their extent.

BAY ISLANDS, COLONY OF THE. This name has been applied to the islands of Ruatan, Barbaretta, Helena, Morat, and Utila, in the bay of Honduras, since their organization as a colony of the British crown, in the year 1850. They were anciently known as Las Guanajas, from Guanaja, now called Barbaretta, which was discovered by Columbus, in his 4th and last voyage, July 30, 1505. It was from this island that he first discovered the coast of the American continent, on which he landed on the 14th of August following, at the point now called Punta Castilla de Truxillo. At the time of their discovery, these islands were occupied by a large population of Indians, considerably advanced in civilization, who kept up a commerce, through the means of large and well-equipped boats, not only with the mainland of Honduras, but also with Yucatan, and, it is

alleged, with Jamaica. For 20 years after the discovery of these islands, they were subjected to repeated attacks from the Spaniards of Cuba, who fitted out expeditions against them for the capture of prisoners for slaves. Their population was in consequence greatly and rapidly reduced. When Cortes reached Truxillo, however, in his famous march into Honduras, the remaining population sent messengers to him to solicit his protection, which he at once extended, driving off the vessels which came for prisoners, notwithstanding they had licenses from the governor of Cuba. For a century subsequent to this event, the islands do not appear to have attracted much attention. The power and enterprise of Spain were directed to wider and richer fields. They seem to have been quietly occupied by their inhabitants, and governed by the authorities of the province of Honduras, as dependencies of the port of Truxillo. With the swarming of the freebooters in the sea of the Antilles, they were among the first to suffer. The pirates ran into their fine harbors, and sweeping off the crops, sailed away, to return when in need of supplies or in want of slaves. The annoyance and suffering from this cause finally became so great, that it was proposed to transport the entire population of the islands to the mainland, and thus deprive the pirates of an asylum, and of the means of prosecuting their lawless enterprises on the adjacent coasts. Many reasons were assigned for and against this measure, and much time lost in the discussion, which was only brought to an end by a formidable demonstration of the freebooters, in 1689. They not only burned the towns on the islands, but committed great havoc on the coast of the mainland. At this time, however, the population of the islands had become greatly reduced, and it appears there were but 4 towns of Indians left, viz.: Guanaja, on the island of the same name; Ruata and Masa on Ruatan (then called Guayama); and Utila on the island of Utila. The total population, according to a report drawn up in this year, by Francisco de Avila, governor of Honduras, scarcely exceeded 400. They all spoke Spanish, and there was a church in every town. The islands did not recover from the blow inflicted by the pirates in 1689, and in 1642 the inhabitants were all taken to the mainland, and established in the vicinity of Truxillo, to the municipality of which town they owed service. But the withdrawal of the Indians from the Guanajas did not have altogether the effect desired. The excellent harbors, fine climate, and great natural resources of the islands, pointed them out as a convenient and commanding station for the freebooters; and scarcely had they been evacuated in 1642, when an English detachment of that miscellaneous fraternity took up positions on both Ruatan and Guanaja. "These positions," says the Spanish chronicler Juarros, "were exceedingly advantageous to them, and proportionally injurious to

the Spaniards, because, being near the mainland, they were able to make their descents whenever they pleased, and with equal facility interrupt the commerce between the kingdom of Guatemala and Spain." The annoyance from this source at last became so great that the viceroy of Guatemala, the governor of Havana, and the president of San Domingo, united in fitting out an expedition of 4 ships of war, under Francisco Villalva, of Toledo, to expel the pirates. This officer found them well fortified, and his first attack failed of success. Receiving reinforcements, he returned in 1650, and, after some hard fighting, expelled them from the islands. The Spaniards regained possession, however, only to find them a waste; and they seem to have remained deserted, or occupied only by a few planters and soldiers, until 1749, when the English entertained the project of obtaining possession of the whole of the Atlantic coast of Central America. In furtherance of this plan, they forcibly seized upon several important points of the mainland, captured Truxillo, and made establishments and erected forts at the mouth of Black river. They also occupied Ruatan, and fortified it with materials carried off from Honduras. These events, in conjunction with others, led to a war with Spain, which lasted until 1763, when a treaty was concluded, the 17th article of which provided that "his Britannic majesty shall cause to be demolished all the fortifications which his subjects have erected in the bay of Honduras, and other places of the territory of Spain in that part of the world, within 4 months," &c., &c. The forts at Black river and at other places were accordingly evacuated early in 1764. But, in violation of the treaty, the English seem to have continued their occupation of Ruatan. They also kept up relations of an improper nature with the Indians on the coast, and engaged largely in smuggling, and in other employments closely allied to piracy, which so exasperated Spain, that in 1780 she once more declared war. As soon as this event became known, the viceroy of Guatemala, Galvez, took active steps to recover the islands, and, at the head of a considerable expedition, set sail on March 2, 1782. He found Port Royal, the principal port of Ruatan, defended by a fort mounting 50 guns, and was obliged to land elsewhere, and make a regular investment. After a short but warmly contested siege, the fort was taken. The lives of the defenders were spared, but their houses, to the number of 500, were destroyed. The other islands surrendered without a blow, the inhabitants being sent as prisoners to Havana. The treaty of peace of 1783, between Great Britain and Spain, with, it would seem, a special reference to these islands, provided not only that the English should abandon the continent (except a certain well-defined territory, in which they might cut logwood, and nothing more), but "all islands whatever dependent upon it." The English evading the stipulations of the

treaty, Spain insisted on more stringent terms, which were incorporated in the treaty of 1786, by which it was provided that the English should "evacuate the country of the Mosquitos, as well as the continent in general, and the islands adjacent, without exception." Nothing could be clearer or more explicit than this; and it seems that, failing to find any means of evading the provision, England did really abandon, not only these islands, but the whole coast. In the year 1796, however, the Caribs of San Vincent, one of the Leeward islands, being attached to the French, gave so much trouble to the English authorities, that it was resolved to deport them, and they were accordingly carried in a body, to the number of several thousands, to Ruatan. It is not clear whether Great Britain meant to reserve her dominion over these Indians, or desired to get rid of them permanently. It is presumed, however, as she abandoned them on the island to their fate, and made no provision for their protection or government, that the latter was her design. Their sufferings excited the sympathy of the authorities of Honduras, who invited them to the mainland, where they established themselves, and have since greatly increased in numbers, constituting a most industrious and valuable portion of the population of Honduras. The English seem to have made no other demonstration on the islands during the 18th century. They remained in the undisturbed occupation of Spain. In 1806 they were visited by Capt. Henderson, an English officer, who, in his "Narrative," informs us that "the island of Ruatan belongs to Spain, and a military station is retained on it." In 1814 Great Britain revived her treaty with Spain of 1763. In 1822, when the Central American provinces achieved their independence, the islands were under the jurisdiction of Honduras. When that province assumed the rank of a state, she retained her jurisdiction, and occupied them without dispute or hindrance from any quarter. Her title to them was clear and unquestioned, and she exercised over them freely the rights of sovereignty.—This state of things continued after Honduras entered the confederation of Central America, until May, 1861, when the superintendent of the British establishment of Balize, as a measure of coercion against the republic, which had refused to surrender certain runaway slaves, made a descent on Ruatan and seized it on behalf of the British crown. The federal authorities remonstrated, and the act was disavowed by the British government. The superintendents of Balize, however, seem to have kept a keener eye on the islands, and to have watched for a pretext to place them under their own jurisdiction. In 1838 their wishes were in part gratified. A party of liberated slaves, leaving the impoverished soil of the Grand Cayman islands, came to Ruatan to settle. Col. Loustrelet, commandant, apprised them that they could not do so without the permission of the state

government of Honduras. A number applied for and obtained the requisite permission, and received grants of land. But another portion, incited by one or two white men among them, appealed, as British subjects, to the superintendent of Balize, Col. Macdonald, who immediately visited the island, in the British sloop-of-war Rover, ran down the flag of Honduras, and, seizing Col. Loustrelet and his soldiers, landed them near Truxillo, and threatened them with death if they ventured to return. The republic of Central America had meantime been dissolved, and the feeble state of Honduras was left alone to contest these violent proceedings. Her government remonstrated energetically, but without obtaining redress; and finally, in 1844, the British government instructed Mr. Chatfield, consul-general, to apprise the Honduras authorities, that "when Col. Macdonald hauled down the flag of that state in Ruatan, it was by order of the British government." It does not by any means appear, that in thus assuming the responsibility of Macdonald's violence, Great Britain pretended to territorial rights in the islands; and certainly the seizure, made in time of profound peace, could not be understood as conveying a title to sovereignty. At any rate, no act of sovereignty followed on the proceedings of Macdonald. Meanwhile the Cayman islanders continued to emigrate to Ruatan, and, in 1848, the population numbered upward of 1,000. The superintendent of Balize several times attempted to prevail upon the people to accept officers of his appointment, but the latter preferred to choose their own magistrates. There was, nevertheless, a small party in the island favorable to British interests, who were active in their efforts to secure English protection. When visited by Capt. Mitchell, R. N., in 1850, he describes them as "electing their own magistrates, by universal suffrage," and "quite ignorant under what government they are placed." A Mr. William Fitzgibbon was chief justice, and acting chief magistrate. Some time in this year, a petition was drawn up by the British party, addressed to the governor of Jamaica, asking him to name magistrates and assume supreme authority in the island. Acting on this petition, Capt. Jolly, in H. B. M.'s ship-of-war Bermuda, was sent to the island, who called a meeting of the inhabitants, and declared them under the sovereignty of Great Britain. Chief Justice Fitzgibbon protested against the whole proceeding: 1, because, at the public meeting called by Capt. Jolly, only 2 votes were given in favor of British occupation; 2, because the petition sent to Sir Charles Grey contained only the names of 14 inhabitants out of 1,800, the remainder being the names of the children attending the schools of the Methodist and Baptist missions; 3, because the occupation was in violation of the treaties between Great Britain and Spain of 1786 and 1814; 4, because it was in violation of the convention between the United States and Great Britain of 1850; and, finally, because

the sovereignty of the islands was incontestably vested in the state of Honduras. In spite of this protest, however, and backed by the guns of the Bermuda, the authorities appointed by Sir Charles Grey were duly installed in the island. Two years after this occupation, on March 20, 1852, a royal warrant was issued, constituting the islands a colony, under the title of "colony of the Bay Islands," of which proclamation was made in Ruatan, by Col. Woodehouse, superintendent of Balize, Aug. 10, 1852.—The proclamation of these islands as a British colony, attracted immediate attention in the United States, where it was universally regarded as a direct violation of the convention of July 5, 1850, known as the "Clayton and Bulwer treaty." This convention provides that "the governments of the United States and Great Britain, neither the one nor the other, shall ever occupy, or fortify, or colonize, or assume or exercise any dominion over Costa Rica, Nicaragua, the Mosquito shore, or any part of Central America." The matter was brought under the attention of congress, and the committee of foreign relations of the senate, after a full consideration, reported "that the islands of Ruatan, Bonacca, Utila, &c., in and near the bay of Honduras, constitute part of the territory of the republic of Honduras, and therefore form a part of Central America; and, in consequence, that any occupation of these islands by Great Britain is a violation of the treaty of July 5, 1850." Expostulations to this effect were at once addressed by the American government to that of Great Britain, and an elaborate correspondence was carried on through the years 1854-'55-'56, between Mr. Buchanan, American minister in London, and Lord Clarendon, on the subject, but without any satisfactory result. The position assumed by Lord Clarendon, that these islands were dependencies of Balize, was, however, effectually overthrown, by the production in parliament of a letter of Sir George Grey, H. M. colonial secretary, dated Nov. 28, 1836, in which the limits and dependencies of Balize were officially set forth. The Bay islands were not included in these dependencies, nor did the limits of Balize, as defined by Sir George Grey, approach within 60 miles of any of the islands. But not only did the discussions between Mr. Buchanan and Lord Clarendon fail of any approach to a satisfactory adjustment of the question in dispute, but owing to the delinquency of the British minister in Washington, and other distinct questions between the two countries, the controversy regarding the Bay islands and Central America in general, began to assume a menacing form. Great Britain hastily augmented her naval forces on the West India station, and her example was promptly followed by the United States; and, for a time, the peace of the two countries hung upon the discretion of a few naval commanders, acting under orders necessarily vague and indefinite. At this critical moment the government of Hon-

duras despatched a minister to London, who took the ground that the question at issue was one that primarily concerned Honduras, and he demanded the surrender of the islands, equally as a measure of justice to that republic, and as a means of withdrawing a dangerous issue between the United States and Great Britain, upon which each had committed itself beyond the power of receding. This solution was regarded with favor by both parties, and a convention was entered into between Great Britain and Honduras, whereby the Bay islands were placed under the sovereignty of the latter state, with the reservation of trial by jury, freedom of conscience, &c., to the actual inhabitants. The principles of this convention were accepted by Honduras, but some of its details were viewed with disfavor by the legislative assembly, and it was returned to London for certain modifications, which, it is understood, have been made, in which case no long time can elapse before the "colony of the Bay islands" will cease to exist, and the islands themselves again pass under the sovereignty of Honduras. Such is the political history, and such the present political condition of these islands.—In a commercial and geographical, as well as in a military point of view, they have always justly been regarded as of considerable importance. Ruatan is the largest, being about 80 miles long by 9 broad at its widest part. "It may be considered," says Alcedo, "as the key of the bay of Honduras, and the focus of the trade of the neighboring countries." With Guanaja, it has been described by various authors as "the garden of the West Indies," the "key to Spanish America," and a "new Gibraltar, which, from its natural strength, might be made impregnable." Young describes it as "one beautiful mass of evergreens, from the shore to the tops of the high hills, interspersed with many coconut gardens, and with patches of coffee-trees, which, though abandoned, still thrive luxuriantly." The principal formation of the island is limestone; the soil, in the valleys, is a rich and deep alluvion; on the mountains and their declivities, a red clay or marl predominates. These mountains rise, in the centre of the island, to the height of 900 feet, and are clothed to their summits with verdure. Large quantities of useful and ornamental timber are found, which is used or exported for shipbuilding, in which the present inhabitants have reached considerable proficiency. A vessel of 400 tons, built there, entirely of mahogany, reached New York in 1856. The island produces in abundance coconuts, plantains, yams, bananas, pineapples, oranges, &c., and the higher grounds are adapted for other fruits of higher latitudes. All tropical products, such as coffee, sugar, tobacco, cotton, &c., need only to be cultivated to become staple commodities of export. Domestic animals thrive well, and the forests abound in deer, wild hogs, Indian rabbits, and wild fowls of many varieties. The climate is moist, cool, and salubrious, and disease is un-

common, except on the low grounds, which are troubled with a species of low fever. On the south side of the island there are many good harbors, the principal of which are Port Royal, Oxen Hole, and Dixon's Cove. All these are spacious and perfectly protected, affording great facilities for careening and repairing ships. They have also fresh water in abundance. Port Royal is estimated to be spacious enough for 20 or 30 sail of the line. The mass of the population, as already said, is composed of liberated slaves from the Cayman islands. They are scattered along the seashore in small groups. Their principal establishment, however, is at Port Royal. In 1843 they numbered less than 100; in 1850 they were estimated at 1,800; and in 1856, at 4,000. Their chief occupations are hunting, fishing, shipbuilding, and agriculture. Their relations are chiefly with Truxillo, Balize, and New Orleans, to which points they send large quantities of fine fruit. In the year 1854 not less than 22 vessels, laden with fruit and vegetables, left Ruatan for New Orleans. Bonacca, or, as it was anciently called, Guanaja, lies 15 miles to the N. E. of Ruatan, to which it is only second in size, being about 9 miles long by 5 wide. The land is high and covered with pines. Its soil, climate, and products, correspond with those of Ruatan. It is but thinly populated, but it is rising in importance. Like Ruatan, it has several good harbors. Utila, the next in size, lies to the S. W. of Ruatan, and within 20 miles of the mainland. Its western extremity is high, but the island generally is low, and less favorable for establishments than Ruatan. It has a scant population, chiefly Spanish. Helena, Morat, and Barbaretta are comparatively small islands, and may be regarded as detached parts of Ruatan, with which they are connected by shallows and reefs, pierced only by narrow and intricate channels. They are all described as of exceeding beauty and fertility. Wild grapes abound on all the hillsides, and the shores afford large quantities of shellfish and turtles. Barbaretta is also said to contain mines of tin. Collectively, whether as regards salubrity of climate, beauty of scenery, fertility of soil, abundance of natural resources, fine harbors, or commanding military and commercial position, the Bay islands can scarcely be equalled, certainly not excelled, by any group in the Caribbean sea or the gulf of Mexico. Situated on the direct line of communication between the Atlantic and Pacific ports of the United States, between Cuba and the continent, and dominating the projected inter-oceanic railway through Honduras, the political relationships of these islands must always be of deep interest to the government and people of the United States, who must always look with jealousy on their retention or occupation by any great maritime power.

BAY LYNX, or AMERICAN WILD CAT (*Lynx rufus*, Gmelin). This animal is 30 inches long, and the tail 5½ inches; the weight about 17 lbs. The general color is reddish brown in

autumn and winter, and ashy brown in spring and summer; the tail is nearly as long as the head, with its extremity on the upper surface black, tipped with more or less white; there is a whitish spot on the hinder part of the ear, bordered with black. The soles of the feet are naked, and the ears are not tufted as in the Canada lynx; the latter animal is also considerably the larger. The wild cat is a cowardly animal, rarely attacking any quadruped larger than a hare or a young pig; it commits considerable havoc among the chickens and other poultry in its neighborhood, among quails, partridges, and such birds as it can surprise. It shows an affinity to the domestic cat by mewing and purring when in confinement; in the woods, during the winter, its caterwauling may be heard for a long distance; it no doubt is occasionally crossed by the domestic species in wild localities.

BAY TREE. See LAUREL.

BAYADEER (Port. *bailadeira*, a dancing woman), used exclusively to designate the professional dancing and singing girls of India. By the Europeans in Hindostan the word is seldom used, *nautch* being the term applied to those exhibitions of dancing which are considered indispensable to every public or private entertainment. The performers are commonly called nautch-nees or nautch-girls. These are recruited from almost every condition in life, but the better sorts are generally derived from good families of the Vaishya and Soodra castes—that is, the merchants and laborers. Girls of tender age, chosen for their beauty, are apprenticed to *dhyas*, a sort of duennas, who are superannuated nautch-nees, and after being inoculated for the small-pox to preserve their beauty, are introduced to a course of severe physical training, and at the same time initiated in all a nautch-nee's arts of adornment and meretricious attraction, beside being taught the popular love ditties which are invariably called for at every nautch, and the extravaganzas that describe the amorous recreations of the gods. But, first of all, extreme suppleness of joint must be acquired; the prima donna of nautch-nees is she who can apply the back of her hand flat against her fore-arm, who in a measure can flex her arm at the elbow, backward as well as forward, who, bending backward from the waist, can sweep the ground behind her with her hair. By continually carrying jars of water on her head she imparts pride to the movements of her neck, sidelong glances to her eyes, prominence to her bust, an undulatory swaying to the carriage of her body, firmness and elasticity to her step. By frequent practice in kite-flying she learns statuesque attitudes and graceful surprises of movement and expression, now running backward in a stooping posture, holding the string near the ground, now tripping forward with arms above her head, and upturned eyes and parted lips. The kite-dance is among the most famous and popular of the bayadeer's performances.—Having thus been graduated in the

dhya's school, the nautchnee at once assumes her professional place among the sisterhood. If, as is frequently the case, she has been devoted to the service of the gods from her infancy, or even from a period antecedent to her birth, by a fanatical father, or by an unhappy mother who only by such a consecration could preserve the life of her unborn child, doomed to the Ganges if it should prove to be a girl, she enters a temple and becomes a *devadasee* or slave of the gods, taking rank according to the caste of her family, the importance of the divinity to whom she is vowed, and the endowment of the temple; here her duties are to assist at the formal services of the shrine, to celebrate in songs, generally licentious, the famous deeds or extravagant pranks of the god or goddess, to dance before the image, to deck it with flowers, and to attend it with dances and songs when it is carried abroad in processions on the stated holidays of the divinity. But all *devadasees* are excluded from ceremonies of peculiar solemnity, such as funeral sacrifices and suttees. In order to be admitted to the sisterhood of *devadasees* the nautchnee must not have arrived at marriageable age, and she must be strictly free from any defect of physical conformation. Her consideration and privileges in the temple are determined by her antecedents of caste and family, rather than by her talents. If of good extraction, as of respectable parentage in the merchant caste, she is confined to the inner temple, not suffered to go abroad without permission of the priests, and as long as her charms survive she serves the passions of the Bramins. If she has children by these, they are brought up in their mother's calling, the girls to be nautch-nees and the boys musicians; in such cases the girls are often called *moorasees*, inheritresses. The punishment of a *devadasee* of the superior class, who at any time, before or after her separation from the temple, shall take to herself a low caste lover, is most severe. The *devadasees* who are recruited from the caste of Soodras or laborers take an inferior rank, but enjoy more freedom; with the exception of the hours when they are on duty in the temples they are at liberty to go abroad, and their earnings are their own. But all, by turns, have their daily duties near the altar, and all must accompany processions; they are also required to attend, when sent for, at the houses of the noble and the wealthy, to assist with their songs and dances at weddings and other feasts. All the *devadasees* are supported out of the revenues of the temples, from which they receive stated wages in money and rice; those of the inferior, also by far the more numerous class, add to these resources the fruits of an infamous profession. Every temple entertains a troop of 8, 12, or even more *devadasees*. If the nautchnee be her own mistress, or if her parents or her *dhya* have no religious preferences, she becomes a *kunchenee*, or a *doominca*, or a *bassegharnnee*, terms for the different sorts of dancing girls who wander through the country in troops of 10 or 12, and whose profession

it is to entertain strangers with music and dancing. These attend at *choultrys* or inns, for the amusement of travellers, or at the garden-houses of wealthy Hindoos, Mohammedans or Parsees to enhance some occasion of revelry. In all the large cities of Hindostan there are sets of these nautchnees under the management of dhyas, ready to be hired for religious or other purposes. Sometimes the girls have formed themselves into an independent company and share their gains with the musicians, who are frequently their husbands; sometimes they are actually the slaves of the dhyas, having been formally purchased by her in their early childhood; but more commonly they are the dhyas's apprentices, bound to her for a certain period in consideration of the education she has bestowed: their earnings belong to her, and she is responsible to the authorities of the place for their support. These kunchenees are the licensed courtesans of India, yet their conduct in public is at all times distinguished by a singular decorum. They practise no lascivious airs, studiously avoid the slightest exposure of the person; no nautchnee, even of the lowest class, will ever stop a man in the street, or offer or submit to indecent liberties in the presence of strangers. A kunchenee regards her first lover as her true husband, and dutifully cherishes his memory during her life; at prescribed periods, even though she be married to another, she relinquishes her vocation for a season, and goes into mourning after the custom of widows. —The nautch girls form a distinct body in Hindoo society, living under the protection of government and regulated by the peculiar rules of their order. The code of Menu provides, that "if a dancing girl commit a crime that renders her property liable to confiscation, the magistrate shall seize all her effects, except her clothes, jewels, and dwelling—in the same manner as to a soldier are left his implements of war; the furniture of her profession shall be exempt from the confiscation which includes the rest of her property." Of all the Hindoo women, the bayadeers alone may learn to read and write; such accomplishments belong to them exclusively, and are, for that very reason, held by the rest of the sex in such abhorrence that to attribute to a respectable woman the possession of even the rudiments of them, is to insult her; she regards the nautchnee's reading and writing as a part of her scandalous arts. The common nautch girls eat any kind of meat except beef, the cow being sacred. They also partake, but not to disgusting excess, of spirituous liquors, which may have misled the Greeks who accompanied Alexander to the conclusion that all the Hindoos were wine-bibbers.—As to the costume of the nautch girl, which is as cumbersome as that of the European ballet girl is flimsy, no more faithful description can be presented than that given by Miss Emma Roberts, in "Scenes and Characteristics of Hindostan:" "These ladies present very picturesque figures, though some-

what encumbered by the voluminous folds of their drapery. Their attire consists of a pair of gay-colored silk trowsers, edged and embroidered with silver, and so long as only to afford occasional glimpses of the rich anklets, strung with small bells. Their toes are covered with rings, and a broad flat silver chain is crossed over the foot. Over the trowsers a petticoat of some rich stuff appears, containing at least 12 breadths, profusely trimmed, having broad silver or gold borders, finished with deep fringes of the same. The *coorlee*, or vest, is of the usual dimensions, but it is almost hidden by an immense veil, which crosses the bosom several times, hanging down in front, and at the back, in broad ends, either trimmed to match the petticoat, or composed of still more splendid materials, the rich tissues of Benares. The hands, arms, and neck are covered with jewels, sometimes of great value, and the hair is braided with silver ribbons, and confined with bodkins of beautiful workmanship. The ears are pierced round the top, and furnished with a fringe-like series of rings, in addition to the ornament worn in England. The diameter of the nose-ring is as great as that of a crown piece; it is of gold wire, and very thin; a pearl, and 2 other gems, are strung upon it, dangling over the mouth, and disfiguring the countenance. With the exception of this hideous article of decoration, the dress of the nautch girls, when the wearers are young and handsome, and have not adopted the too prevailing custom of blackening the teeth, is not only splendid, but becoming; but it requires a tall and graceful figure to support the cumbersome habiliments which are worn indiscriminately by all the performers."—The toe-rings of the nautchnee are broad above, so as to cover nearly the whole toe, like a shield. Her arms are loaded with heavy bracelets, called bangles, which often weigh a pound. Her throat is encircled with several necklaces, some of pearls, some of gold richly chased or curiously wrought. On her forehead, between the eyebrows, she wears a pendant jewel. Her nose-ring is hung with a single pearl, or with diamonds and rubies, according to her professional repute and wealth. She imparts to her eyes a languishing softness by coloring the inner edges of the lids with a black powder of antimony, called *soorma*; she stains her nails and the soles of her feet rose-color, with the juice of a plant called *mihandee*; she is fond of flowers and the most pungent perfumes; and a small mirror, set in a thumb-ring, is never omitted.—The usual arrangement for a nautch is, a spacious apartment, cleared of its furniture, spread with a white cloth, and brilliantly illuminated. At the upper end the guests are seated; the servants, always very numerous, are ranged along the sides; and the master of ceremonies, with his attendants, waits at the lower end, to introduce and lead off the different sets of performers. These come on in parties of 7—a pair of dancers are attended by 3 musicians,

and 2 *mussalchees*, or torch-bearers; the girls advance to the front, the musicians take their places, in a squatting posture, a little in the rear, and a *mussalchee*, in the same attitude, plants himself on either side. The instruments consist, usually, of a sort of guitar, strung with steel and brass, and called *vena*, and 2 *tom-toms*, or drums. Of the various sorts of vocal composition the principal are the *dhoo-pud*, or heroic song, the *holes*, which relates the amours of Krishna in the groves of Vrigo, and the *tuppa*, or popular love ditty. The shrill, sharp key of the women, the monotonous and discordant jangle of the instruments, are intolerably offensive to cultivated ears. The dance is, strictly speaking, a pantomime, explained with music, in which commonly the old story of love and its troubles is related; the tones of the singers, the struggles of *vena* and *tom-tom*, the expressions, the gestures of the *nautchnee*, rise with the predicaments. At first every thing tells of soft delight—tender wooing, homage, adoration, bliss; then come complaints of the treachery of a sister, the persecutions of a meddling mother-in-law; jealousy succeeds, reproaches for the lover's neglect, imprecations of rivals, fear, hatred, distraction, despair—at which point *nautchnees* and musicians are alike exhausted by their exertions, and must be relieved by a fresh set, while they retire to fortify themselves with stimulants for renewed struggles. The wear and tear of this constant labor and excitement shatter the constitution and disperse the charms of the *nautchnee* in a very few years; the hardest last but 3 or 4.—The *nautch* girl's style of dancing is the reverse of that to which the ballet girl devotes herself; the former never quite raises her feet from the floor, or at most only so much as may suffice to jingle her ankle-bells and foot-chains in concert with the music; shuffling, sliding, gliding, floating, it is with her eyes, her neck, her bust, her arms, her waist, that she dances, rather than with her feet; when she advances, it is with a noiseless apparition; in retiring, she simply grows dimmer. Meantime the *mussalchees*, by raising or depressing their torches, display her charms of attitude and expression with all the advantage of the most becoming light, and the musicians incite her to her utmost skill by vehement applause, and gestures so energetic as at times to resemble intoxication.—The *nautchnee's* song is often a duet, in which a boy, studiously disguised in feminine attire, takes a part. The voices of these lads are invariably sweeter than those of the women, and they seem to have more of the art of modulation, and a better taste in music.—According to the Abbé Dubois, the musical knowledge of the *nautch* girls is limited to 33 tunes, of which number but very few of them are familiar with more than half. Of these airs, by far the most popular, and most widely known, is the one called *Taru bu Taru*, an extremely pleasing composition, of which Mr. George W. Johnson, of the

supreme court at Calcutta, gives the words and music in his "Stranger in India."—Among the noted bayadeers, the most admired in late years have been Nickee and Alfina. The former long held the rank of a native prima donna in Calcutta. Many of the *nautch* girls are extravagantly paid, and Nickee, for a time, received 1,000 rupees (\$500) for an evening's performance—that being her regular charge. Alfina was the favorite at Delhi, and the dress and ornaments in which she danced were valued at 40,000 rupees (\$20,000)—her own property. The notorious Begum Sumroo was educated for a *nautchnee*.

BAYAMO, or SAN SALVADOR, a town in the island of Cuba. It is situated near the river Cauto, 60 miles N. W. of Santiago, and carries on a good trade. The population is variously estimated, from 7,500 to 14,000.

BAYAN KARA MOUNTAINS. On the western borders of the Chinese empire, in the province of Tsing Hai, commences the great mountain system (in about long. 92° E., and lat. 37° N.) which divides China proper into the northern and southern slopes of one huge water-shed extending from the point above mentioned to the Pacific, and drained by the Hoang-ho, and the Yang-tse-kiang. This mountain system pursues in the main an easterly direction, sending off a spur to the south in about longitude 96° E., and another to the north in longitude 105° E. The western extremity of this broken mountain chain is known as the Bayan Kara range, and extends in an E. S. E. direction from the western extremity above designated to long. 102° E., and lat. 34° N., where the system is broken by the cutting through of the Hoang-ho or Yellow river from the southern to the northern flank of the chain, from which point eastward the system is known as the Peling range. The Bayan Kara mountains then lie on the northern side of the Yellow river, which takes its rise on their southern flanks, about midway of the range, and just at the head of the southern spur called the Yun Ling. The Bayan Kara mountains divide Tsing-hai or Kokonor into 2 nearly equal sections, northern and southern, and constitute the water-shed of a province almost entirely uninhabited, and little known. Their highest peaks, among which may be mentioned the Tchakhare, are covered with eternal snows, and through the entire range the snows only melt in June or July, but the valleys at their feet are fertile, and afford excellent pasturage. The Bayan Kara range connects on the west with the system known as the Kuen-lun, lying to the west of the sources of the two great Chinese rivers, the Hoang-ho and the Yang-tse-kiang.

BAYARD, JAMES A., an American lawyer and statesman, born at Philadelphia in 1787, died at Wilmington, Del., Aug. 6, 1815. He was educated at Princeton, studied law in Philadelphia, settled and commenced practice in the state of Delaware. He was elected to congress in 1796, and distinguished himself among the supporters

of the federal administration as a legal and constitutional orator. But perceiving in the contest between Mr. Jefferson and Mr. Burr the danger to the success and stability of the government, he was the leader in that policy which resulted in the election of the former to the presidency. He was transferred to the senate in 1804, where he remained until selected by Mr. Madison as one of the commissioners for negotiating a peace with Great Britain under the mediation of the emperor of Russia. He accordingly sailed for St. Petersburg in May, 1813, and in the absence of the emperor, proceeded by land to join the commission at Ghent. He took a prominent share in the negotiations, and after the ratification of the treaty, was appointed envoy to St. Petersburg. This appointment he immediately declined, saying he had no wish to serve the administration except when his services were necessary for the good of his country, at the same time expressing a readiness to co-operate in the formation of a commercial treaty with Great Britain; but being seized with an alarming sickness, he sailed for home, and only arrived in time to die in the arms of his family. He left an enviable and unblemished name, and is still regarded as the glory of Delaware.—His son, JAMES A., was elected to the U. S. senate from that state in 1850, and again in 1856.

BAYARD, JEAN FRANÇOIS ALFRED, French vaudevillist, born in Oharolles, in the department of Saône-et-Loire, March 17, 1796, died Feb. 20, 1858. He studied law, and received his diploma of advocate, but in 1821 wrote *Une promenade à Vaucluse*, which was successfully performed at the vaudeville theatre. It was followed by the *Reins de soies ans*, brought out at the *Gymnase*, and received with great favor. Bayard united his labors in many instances to those of Melesville, Carmonche, Dumanoir, and Scribe, whose niece he married, and, by his remarkable facility of composition, he became the author of over 200 plays, many of which still keep the French stage, and to which English and American playwrights have been greatly indebted. A complete edition of his works, in 8 vols., containing a memoir written by Scribe, was brought out at Paris in 1856.

BAYARD, PIERRE DU TERAIL, chevalier de, known in French history as the chevalier *sans peur et sans reproche*, one of the purest and most beautiful characters in mediæval history, and in himself a real type of the ideal knight errant of romance. He was born in the chateau of Bayard, near Grenoble, of one of the most noble families in Dauphiny, in 1475, died April 30, 1524. At the age of 13 he became one of the pages to the duke of Savoy, who at that time was an ally of France; and, being observed by Charles VIII., who was struck by his skill and grace in riding, was asked for by that romantic and chivalrous prince, and brought up, as a preparation to being attached to the royal suite, in the household of Paul of Luxembourg, the count de Ligny, where he was indoctrinated in all the

feats of arms and niceties of chivalry, which were then held necessary to constitute a gentleman and soldier. His first experience in war was gained in the wild and daring march of Charles VIII., with a small unsupported army, through the whole length of Italy, to invade the kingdom of Naples, which was won and lost in a few days, with equal ease; and in that campaign, when the French were cutting their way back to their own country, he greatly distinguished himself, taking, with his own hand, a stand of colors in the battle of Verona. After this, in the early part of the reign of Louis XII., he was again serving in an invading army in Italy, when, after a battle fought near Milan, in the heat of pursuit he entered that city, pell-mell with the fugitives, and was made prisoner, but, in consideration of his astonishing valor, was sent back without ransom by Ludovico Sforza, surnamed the Moor, together with his horse and arms. In Apulia he defeated a Spanish corps, commanded by Alonzo de Sotomayor, who broke his parole and slandered Bayard, in return for which the latter challenged and slew him in single combat, and afterward covered the retreat of the whole French army, and defended the bridge over the Liria, now the Garigliano, single-handed against half an army. For this feat he received an augmentation of his armorial bearings, a porcupine bristling with spears, with the motto *Vires agminis unus habet*. To describe all his exploits at length would fill a volume; suffice it, that wherever honor was to be won or danger to be incurred, Bayard was there. Desperately wounded in the assault of Brescia, he was carried to the house of a nobleman who had fled, abandoning his wife and daughters to the fate which befalls women in a sacked city, and from which the wounded enemy alone preserved them. Half recovered from his wounds, he joined Gaston de Foix before Ravenna, where he again took, with his own hand, 2 Spanish standards, and converted a retreat of the enemy into a rout. In the subsequent wars with Ferdinand the Catholic of Spain, he displayed the same chivalric valor and the same generalship among the Pyrénées which he had displayed in his boyhood, among the passes of the Alps and Apennines. In the dark days which clouded the latter years of Louis XII., when Henry VIII. brought his English archers to back the German Maximilian in Flanders, and Têronanne and Tournay went down, with but feeble resistance, before the allies, Bayard was the same in adverse as he had been in prosperous fortunes. Made prisoner at the disgraceful battle of the Spurs, it was again his glory to be taken under circumstances of such honor that, once more, he was dismissed, with his horse and arms, unransomed. It was, however, in his noon of manhood that his glory shone the brightest. When Francis I. invaded Italy, after his accession to the throne of France, it was Bayard who was the precursor of his march; who made Prosper Colonna, at the very moment of his belief that he had ambushed and

surprised him, his prisoner; who, in a word, paved the king's way to the magnificent battle of Marignano. In that tremendous conflict, which the old *maréchal Trivulciano*, the hero of 18 pitched battles, pronounced to be the only battle of men he had ever seen, all the rest being mere child's play, but this an affair of giants, he did prodigies, and more than any or all beside, to change what once seemed a lost fight into a victory. At its close, his sword conferred the accolade on the shoulder of his king, Francis I., who deemed it honor enough to take knighthood at the hand of such a paladin as Bayard. The fortunes of war, always proverbially fickle and changeable, were never more so than at this epoch; and when, a short time later, the emperor, Charles V., invaded Champagne, his wonderful defence of the open town of Mézières alone prevented his penetrating to the heart of France, of which, by this exploit, he deserved, as he obtained, the name of savior. His next war was his last. Genoa, ever an unwilling conquest of the French arms, revolted; and, under the command of Bonnavet, Bayard was sent to reduce the city to obedience, and to chastise the rebels. In the first instance success attended their advance; but, after the surrender of Lodi, fortune again changed, and, foot by foot, the French were beaten out of their conquests. In retreating through the Val d'Aosta the French rear was beaten, Bonnavet was severely wounded, and the safety of the army was committed to Bayard, if he perchance might save it. In passing the river Sesia, in the presence of a superior enemy, as Bayard was covering the rear and pressing hard upon the Spaniards, who were fast giving way before his impetuous charge, he was shot through the right side by a stone from an arquebuse, which shattered his spine. "Jesu, my God!" he cried, "I am a dead man." And then commanding that he should be placed erect, in a sitting posture, with his back against a tree, which chanced to be growing near the field, with his face to the Spaniards, and the cross-hilt of his sword held up as a crucifix before him, he confessed his sins to his esquire, sent his adieux to his king and his country, and died in the midst of weeping friends and admiring enemies. With his fall the battle was ended. The French lost every thing—standards, drums, baggage, ordnance; thenceforth their return to France was not a retreat; it was a flight. But there was most grief that they had lost Bayard. His body remained in the hands of the Spaniards; but the Spaniards of that day were the most honorable as they were the bravest of men, whether to friends or foes. They embalmed the mortal remains of the hero, and returned them to the French, unsolicited. A simple bust, with a brief and modest Latin inscription, in the church of the Minorites, in Grenoble, erected in 1823, is his only monument.

BAYAZEED, or BAYAZID, a decayed town of Armenia, foot of Mount Ararat; pop. in 1857,

4,000. The place is unimportant except as a military post on the Turco-Persian frontier.

BAYEN, PIERRE, a French chemist, born in 1735, at Châlons-sur-Marne, died at Paris in 1798. During the 7 years' war, he held the office of chief apothecary to the French army in Germany, and was afterward employed by the government in analyzing the mineral waters of France. He made some valuable experiments upon the oxides of mercury. He was familiar with other important branches of science beside that which he made his speciality, and united a sound judgment with spotless integrity. His writings, entitled *Opuscules chimiques*, were published in 1798.

BAYER, GOTTLIEB SIEGFRIED, a German philologist, grandson of Johann Bayer, born at Königsberg, in 1694, died at St. Petersburg, Feb. 21, 1788. He displayed from his earliest childhood a singular passion for Chinese and other eastern languages. He studied the Coptic at Berlin, under La Crosse, Arabic at Halle, under Solomon Negri, and at the same time opened a correspondence with the missionaries in India, in order to obtain more information about the Sanscrit and Hindostanee. On the foundation of the academy of sciences in St. Petersburg in 1726, he became professor of Greek and Roman antiquities. Beside his extraordinary knowledge of languages, Bayer was an eminent historical and archaeological scholar. His monument is his work published at St. Petersburg in 1730, *Museum Sinicum, in quo Sinica lingua et literatura ratio explicatur*, containing a Chinese grammar, a grammar of the dialect of Shin-Shu, and many interesting notices on Chinese literature.—JOHANN, a German astronomer, born at Augsburg toward the end of the 16th century, died in 1660; celebrated for a large work published in 1603, under the title of *Uranometria*, and republished in 1627 under the title of *Colum Stellatum Christianum*, which contains a minute description and a catalogue of the constellations. He contributed much to the simplification of astronomical science, by avoiding the old unintelligible nomenclature and by denoting the stars in every constellation by the letters of the Greek alphabet in their order. Bayer was also a good student of law and an able theologian. He was settled as minister over different parishes, and so zealous in his advocacy of Protestantism that he was called *Os Protestantium*. The emperor Leopold ennobled him.

BAYEUX, the capital of an arrondissement of the same name, containing 6 cantons, 144 communes, and about 85,000 inhabitants, in the department of Calvados, France. The town, the ancient Oivitas Bajocassium or Bajocai of the Romans, contains about 9,000 inhabitants, pleasantly situated in a valley of the river Aure; is the seat of a bishopric, of a tribunal of commerce, and tribunals of primary jurisdiction, with a commercial college, a public library, extensive manufactories of lace, damasks, calico, serges, cotton yarn, a large porcelain factory, paper-mills, many tanneries, dyeing, and print-

ing establishments, trade in horses, cattle, and poultry, fish, cider, apples, linen, hemp, &c., and an important trade in butter, of which about 20,000 lbs. are weekly exported to Paris.—Bayeux existed previous to the Roman era, and bravely survived all the calamities which by fire and sword were inflicted upon the town by the Normans in 1046, by Henry I., son of William the Bastard, who, in 1106, took it away from his half-brother Otho, to whom it had been transferred by William; and in 1356 by Philippe de Navarre, brother of Charles the Bad. In 1450 the town surrendered to the English. In 1563 and 1568 it fell into the hands of the Huguenots, who, however, were ousted from its possession by the army of the League in 1589, and in 1590 the town submitted to the duke of Montpensier. The antiquity of Bayeux is palpable in the streets and public buildings, as the town hall, formerly the episcopal palace, the churches of St. Exupère and St. Patrick, and especially the Gothic cathedral with its imposing and beautiful portal, a majestic edifice built before the Norman conquest of England.

BAYEUX, GEORGES, a French advocate and writer, born at Caen, in 1752, put to death Sept. 6, 1793, by the populace of his native town, on account of his connivance with the royalists. At the time of his death he was *procureur général* syndic of the department of Calvados. Previously he held the position of royal commissioner, and for some time in 1787 he was employed by Necker as first clerk of the treasury.

BAYEUX TAPESTRY, said to have been the work of Matilda, wife of William the Conqueror, and representing the events connected with the conquest of England. The Abbé de la Rue and others have questioned its authenticity, but this traditional opinion is now generally credited, although Thierry in his work on the "Conquest of England," did not think proper to avail himself of the pictures of Norman costumes and Norman history and manners, which constitute the great historical interest of this remarkable tapestry. It is 20 inches in height and 214 feet long, in an excellent state of preservation, evidently the work of the queen and ladies of the Norman court who were familiar with the history of their day and the character of their contemporaries, and at the same time possessed of an exquisite genius for embroidery. The tapestry bears intrinsic evidence of its genuineness by the elaborate manner in which the various characteristics of Norman life are reproduced upon the canvas from the leading political events down to the smallest minutiae of society, while at the same time the facts revealed by this picturesque work of art are corroborated in every particular by the grave accounts which have come down to us from other sources.

BAYEYE, an African tribe, dwelling on the borders of Lake Ngami and on the banks of the river Tegea. They are the Quakers of the African body politic, have never been known to fight, have religious scruples against war, and

have invariably submitted to the rule of every horde which has overrun the country in which they love to dwell. They are now subject to a branch of the Bechuannas, by whom they are called Bakoba, or serfa, but they themselves retain their old name, which signifies "men." Their language, features, and complexion prove their affinity to the northern tribes. They are of a merry and cheerful disposition, given to lying and pilfering, abound in superstitious notions, practise polygamy, live in round huts covered with rush matting, love the dance, especially the mimic representation of the sports and courtships of wild animals, and derive their chief sustenance from their fertile soil and from the abundance of fish in the rivers.

BAYLE, PIERRE, a French philosophical writer, born Nov. 18, 1647, at Carlat, county of Foix, died Dec. 28, 1706, in Holland. He received the first rudiments of learning from his father, a Protestant clergyman, who soon had to send him to a college for higher instruction, so rapid was his progress. There his health becoming impaired by close application, he was ordered to the country by his physician, and repaired to one of his family relations; but his eagerness for learning had not slackened, and he found ample food for his curiosity in the private library of his host; he read every book he could put his hand on; but he felt a peculiar relish for Amyot's "Translation of Plutarch" and Montaigne's "Essays." These had a marked influence on his turn of mind and future pursuits. When 21 he commenced studying philosophy with the Jesuits of Toulouse, who for a while held such sway over his opinions that he renounced Protestantism, and was carried so far in his zeal that he attempted to convert his own elder brother, who was already a Protestant clergyman in his native town. But he soon repented of his abjuration, and returned within the pale of his former church; and to evade the punishment decreed by Catholic regulations against every relapse, he took refuge in Geneva. There he became acquainted with the Cartesian philosophy, for which he thenceforth showed a strong predilection. His ambition was to be at liberty to quietly devote himself to science; but he was poor, and to make a living, he had to engage as a tutor in several families. He was bold enough to return to France, where he was not molested. In 1675 he became professor of philosophy in the Protestant university at Sedan. He devoted all his time to the fulfilment of his duties so far as to neglect his only pleasure, his correspondence with his friends. Soon, however, he appeared as the defender of philosophical views against the prevalent opinions of the time. The duke of Luxembourg being charged, not only by popular rumor, but before a high court of councillors of state, with having made a compact and holding regular intercourse with the devil, Bayle wrote an anonymous pamphlet in his favor; this was but a speech supposed to be delivered by the duke, in which the ac-

cussion was disposed of in a masterly manner and crushed under the weight of powerful and witty arguments. A little after he entered the lists against Poiret, the enthusiastic editor and supporter of the visionary Antoinette Bourignon. He argued against his opinions about God, the soul, and evil, in his *Cogitationes rationales de Deo, anima et malo*. Meanwhile the university of Sedan had become insufferable to Louis XIV., then preparing for the repeal of the edict of Nantes, and was therefore suppressed, notwithstanding the promise given on this point to the duke of Bouillon on the cession of his duchy to France. But the city of Rotterdam, anxious to prove that it had not degenerated from her love for science since the age of Erasmus, eagerly offered an asylum in her celebrated school to the Sedan professors; and Bayle was allowed to continue there his philosophical teachings. There he also completed his *Pensées sur la comète*, a work which he had planned to confute the errors and allay the fears revived among the people on the appearance of the comet of 1680. This work, published in 1682, at Rotterdam, was eagerly read everywhere, especially in France, although prohibited there by the police. His love for historical studies soon engaged him in another controversy. Maimbourg, a Jesuit writer of some talent, had given to the public a *Histoire du Calvinisme*, in which the reformation and reformers were violently assailed. Bayle undertook to repel his assertions; and in less than 15 days wrote a critical pamphlet, which was at once extensively circulated, reaching its 3d edition in a few weeks. In France, it was ordered to be publicly burned by the hand of the executioner, but was in consequence more eagerly sought for than ever. His effort in the cause of his religious faith occasioned him much trouble and difficulty, and the most influential controversialist of his age, had also written a refutation of Maimbourg's history; but it appeared too late, and, in comparison with that of Bayle, was thought a decided failure. Thence arose, on the part of Jurieu, unfriendly feelings, which were heightened to positive hatred by subsequent circumstances. In 1684, Bayle commenced a literary journal, under the title of *Nouvelles de la république des lettres*, which was quite successful, but was productive of strife in which Jurieu secretly participated. His anger, however, had its full scope, on the publication of Bayle's pamphlet, *Commentaire philosophique sur les paroles de l'Evangile: "Contrains-les d'entrer."* This, being published on the occasion of the severe measures of Louis XIV. against the protestants, was but an eloquent plea in favor of religious toleration. Jurieu charged Bayle with being indifferent to religion, in fact, almost an infidel, and, intermixing calumnies with audible accusations, and actively pursuing his intrigues, while his peaceful opponent contented himself with writing a defence, which, though thought conclusive, he so artfully conducted

this warfare against the unsuspecting philosopher that he finally got the better of him, and had him dismissed from his professorship, deprived of his pension, and, at last, in 1693, forbidden by the common council of Rotterdam to teach publicly. This severity did not disturb the equanimity of the philosopher, although he was entirely dependent on his labors for a living. He then resolved to undertake a work, the project of which he had formed years before, and which was to become his principal claim to renown; we mean his *Dictionnaire historique et critique*, in which he intended to point out the errors and supply the deficiencies of the most important publications of the same kind. He went to work with eagerness, and, in 1697, the first edition appeared, and had at once an immense success, notwithstanding the defects inevitable in so vast a performance. But the public favor seemed to revive the hatred of Jurieu and some others of his opponents. They were not contented with criticising him bitterly; they arraigned him before the consistory of the Walloon church, who ordered him to make many corrections and alterations in various important articles. Bayle showed both patience and activity in defending himself, while submitting with respect to the ultimate decision. But this controversy occupied much of his time, and prevented him from improving as completely as he wished the work to which he had devoted his life. Between his constant labor and the attacks of his opponents he did not enjoy a moment of rest; so it may be justly said that he died "with his pen in hand." His book did much to enlighten the age in which he lived, and is still readable. He has been called the Montaigne of the 17th century; but, with a similar tendency to skepticism, though more interest in the truths he discusses, he does not possess the ease and grace of that inimitable writer. Bayle spent his whole life in working, and the only relaxation he indulged in was corresponding with his friends, among whom were several of his most eminent contemporaries, Malebranche, Fontenelle, Buckingham, Shaftesbury, Burnet, St. Evremond, Leibnitz, &c. Bayle published the second edition of his *Dictionnaire* in 1702, but the most valuable editions are those of 1740, at Basel and Amsterdam, both consisting of 4 vols. folio. The English edition, by Thos. Birch and Lookman, London, 1784-1741, 10 vols. folio, contains many additions. The most recent is that of Beuchot, Paris, 1820, 16 vols., 8vo.

BAYLEN, a town of Spain, province of Jaen, at the foot of the Sierra Morena; pop. about 4,500. It commands the road leading from Castile into Andalusia; and it was thus the scene of one of the most important events in the peninsular war. The French general, Dupont, who was in command in Andalusia, while attempting to cross the Sierra, was surrounded by the Spaniards, and in a fit of despair or aberration, surrendered June 20, 1808, with 16,000 excellent troops to the Spanish gen-

eral, Castanos. This surrender is known as the capitulation of Baylen, and was regarded by Napoleon as the principal source of his disasters in Spain.

BAYLEY, FREDERICK W. N., British journalist, born in 1807, died 1852. The son of an officer in the British army, he accompanied him to Barbados, in Sept. 1825, and on his return, published "Four Years' Residence in the West Indies," which appeared in 1830. Soon after, he established an amusing, clever, short-lived, half-penny periodical, called the "Omnibus," almost wholly written by himself, in which, in verse as well as prose, literature, theatricals, fashions, and town talk, were discussed in a lively manner. He had remarkable facility in versification, and wrote a great number of songs, of which "Wedded to Immortal Poetry" had great popularity. He was the first editor of the "Illustrated London News." His separate publications, beside the "Four Years," were "A new Tale of a Tub," "Little Red Riding Hood," "Blue Beard," and the poetry to Ferrard's "Humming Bird Annual." From the number of his Christian names, and to distinguish him from Haynes Bayly, the lyricist and dramatist, he was generally known as "Alphabet Bayley."

BAYLEY, SIR JOHN, English judge, born 1763, died 1841. The son of a country clergyman, he graduated at Cambridge with distinction, and obtained a fellowship. Having studied the law, he practised for some years as special pleader, and in 1789, published a "Treatise on the Law of Bills of Exchange." He also edited Lord Raymond's reports, with corrections, references, and notes. In 1792 he was admitted a barrister, and appointed sergeant-at-law in 1799. For a long time, he and Sergeant Best (afterward Lord Wynford) had the leading practice in the court of common pleas. In 1808 he was made one of the justices of the court of king's bench, and knighted. His great legal knowledge obtained him the reputation of being one of the best common-lawyers on the bench, and it was expected by the profession, on the retirement of Lord Ellenborough, in 1818, that he would have been appointed to succeed him as chief justice. He quitted the bench in 1834, when he was honored with a baronetcy and a seat in the privy council. Sir John Bayley was deeply imbued with devotional feelings, and published, in 1816, the "Book of Common Prayer," with notes by himself.

BAYLEY, RICHARD, an American physician, born at Fairfield, Conn., in 1745, and died Aug. 17, 1801. He studied medicine under Dr. Charlton, and afterward in the hospitals of London; in 1772 he returned to New York and commenced practice. At this period he devoted his attention expressly to an examination of the pathology of croup, and exploded certain fallacies in regard to the causes and proper mode of cure of this disease; his opinions were adopted by many of the most distinguished European physicians. In 1775 Dr.

Bayley revisited England, where he remained until 1776, engaged in study and practice with the aid of Dr. Hunter. In the spring of that year he returned to New York as surgeon in the army under Gen. Howe. He however threw up his commission the following year at Newport, and continued the practice of his profession in New York. His letters to Hunter upon the croup were published in 1781. In 1781 he gave lectures upon surgery; in the next year his valuable collection of specimens, illustrating the subject of morbid anatomy, was totally destroyed by the "doctors' mob." In 1793 he was elected the first professor of anatomy in Columbia college, which, however, he afterward exchanged with Dr. Post for that of surgery. On the appearance of the yellow fever in New York about this time, with his usual energy and devotedness, he studied faithfully the cases of the disease, and in 1797 published a work upon the subject, attributing it entirely to local causes, and repudiating the theory of contagion. He was at this time health officer of the port of New York, and strenuously exerted himself to obtain the passage of proper quarantine laws in which he was finally successful. Having devoted his whole life to exertions for the benefit of public health, Dr. Bayley at length fell a victim to the very errors he had constantly used his best endeavors to correct. In visiting an emigrant ship in his official capacity he entered a cabin crowded with passengers who had slept there during the night, without ventilation, and containing many sick with the ship fever; his exposure on this occasion resulted in his death a week after.

BAYLIES, FRANCIS, an American statesman, member of congress from Massachusetts for several sessions, born in 1784, died at Taunton, Mass., Oct. 28, 1852. In the presidential contest which finally resulted in the election of John Q. Adams, he threw the only electoral vote for Jackson that was given from New England. He was for a short time minister to Brazil. He published in 1828 a history of the old colony of Plymouth.

BAYLY, THOMAS HAYNES, an English lyric poet and dramatist, born at Bath, Oct. 13, 1774, died April 22, 1839. In his youth he exhibited great facility in writing songs, and had the advantage, like Thomas Moore, of being well acquainted with music. The talent for poetry which he possessed, and the ample fortune of his family, aided by his accomplishments and pleasant manners, enabled him to move, with great distinction, in fashionable life—chiefly in Bath and London. His pecuniary means had been greatly diminished, in consequence of Irish tenants being unable or unwilling to pay their rent, he took to literature as a profession at the age of 35, and his "Melodies of various Nations" (lyrics, with musical accompaniment composed and arranged by himself and the late Sir Henry Bishop) met with immediate success. From that time to his death, Mr. Bayly was one of the most prolific and popular

English song-writers. His "I'd be a Butterfly" had extraordinary popularity in its day, and a ballad, "Oh no, we never mention her," sung by Mrs. Wood (Miss Paton), was as well known and highly esteemed, in its time, as almost any of Moore's Irish melodies. Of many hundred of his songs, few, however, are now remembered. Occasionally, he showed himself capable of writing better things than these ephemera, and some poems of sentiment, in annuals and magazines, were imbued with beauty and grace. Mr. Bayly was author of several successful farces, and of two or three novels, of which "Kindness in Women" was the best. His personal character was amiable, and he appears (from his life, written by his widow, and prefixed to a posthumous collection of his poetical remains) to have borne prosperity with moderation and reverses with patience. To the last, he fluttered in what is called fashionable society, for which his limited means, latterly, were ill adapted.

BAYLY, THOMAS HENRY, an American statesman, born in Accomac county, Va., in 1810, died June 22, 1856. He graduated at the university of Virginia, was admitted to the bar in 1830, and was for several years a member of the general assembly of the state. He was also a brigadier-general in the militia of Virginia. In 1842 he was elected judge of the circuit superior court of law, an office which he resigned in 1844, when he was elected a representative in the national congress; and by successive reelections he held the latter position till his death. As chairman of the committee on ways and means, he was the leader of the house during many sessions, and was highly respected by men of all parties, as well for his urbanity and dignity, as for his ability. The family home in which he died was established by his ancestors from England in 1666, and it is remarkable that he held just the same public offices that had been filled by his father.

BAYNAM, WILLIAM, an American surgeon, born in Caroline county, Va., in 1749, died Dec. 8, 1814. He completed his medical education in London, where he resided for 16 years, and was long assistant demonstrator to the professor of anatomy and surgery in St. Thomas's hospital. He was probably unsurpassed in his time as an anatomist, and performed many remarkable operations. He furnished some excellent preparations in the museum of Oline and Cooper in London, and wrote various papers for medical journals.

BAYNE, ALEXANDER, a Scotch professor, and writer upon the law of Scotland, born at Logie, in the county of Fife, passed advocate at the Scotch bar in 1714, died in Edinburgh, in June, 1737. The common law of England had been superseded in Scotland, in the 16th century, by the principles of the civil and canon laws, and candidates for the bar were then accustomed to prepare themselves in foreign universities. Gradually, however, the system of Scotch law came to differ from that of the

Roman law, and therefore the university of Edinburgh in 1722 established a professorship for instruction specially in the law of Scotland. Mr. Bayne was appointed to this chair, and by his learning and ability immediately wrought a change in the course of legal study. To his influence is to be attributed the subsequent regulation, requiring candidates to pass examination not only in the civil law but also in the municipal law of Scotland. In 1726, Mr. Bayne published Hope's "Minor Practicks," a work of great acuteness and learning, which had long remained in manuscript, to which he prefixed a discourse on the "Rise and Progress of the Law of Scotland and the Method of Studying it." He also published a volume of "Notes" for the use of students of Scotch law, and a work on the criminal law of Scotland.

BAYONET. This weapon, now generally introduced for all line-infantry, is usually stated to have been invented in France (apparently at Bayonne, whence the name) about the year 1640. According to other accounts, it was adopted by the Dutch from the Malays, who attached their *kris*, or dagger, to a musket, and introduced into France about the year 1679. Up to that time, the musketeers had no effective weapon for close combat, and consequently had to be mixed with pikemen to protect them from a closing enemy. The bayonet enabled musketeers to withstand cavalry or pikemen, and thus gradually superseded the latter arm. Originally, it was fastened to a stick for insertion into the barrel of the musket, but as it thus prevented the soldier from firing with bayonet fixed, the tube passing round the barrel was afterward invented. Still, the pike maintained itself for above half a century as an infantry weapon. The Austrians were the first to exchange it, for all their line infantry, for the musket and bayonet; the Prussians followed in 1689; the French did not do away entirely with the pike until 1703, nor the Russians till 1721. The battle of Spire, in 1703, was the first in which charges of infantry were made with fixed bayonets. For light infantry, the bayonet is now generally replaced by a short, straight and sharp-pointed sword, which can be fixed in a slide on one side of the muzzle of the rifle. It is thus certainly less firmly fixed, but as such infantry are expected to charge in line in exceptional cases only, this drawback is considered to be balanced by the manifold uses in which such an instrument can be employed.

BAYONNE, a city of France, department of Basses-Pyrénées, at the confluence of the Adour and Nive. It is separated into 8 parts, named Great and Little Bayonne, and the suburb of St. Esprit. It is 8 miles from the coast, and 18 from the Spanish frontier at Fontarabia. It is finely situated and has quays and promenades; a mint, theatre, schools of commerce, naval and commercial docks, chamber and tribunal of commerce, distilleries, sugar refineries, and glass works. It exports timber, tar, corks, superior

hams, chocolate, liqueurs, and cream of tartar; and imports fine wool, licorice, and olive oil. It has a cathedral of the 13th century and a citadel of Vauban's. Its vessels are engaged to some extent in the whale fishery. It is the seat of a United States consulate, and since the establishment of the imperial court of Napoleon III. annually for 3 months at Biarritz, Bayonne has come to be regarded as a convenient place for political movements. Bayonne is distinguished in the annals of religious and civil conflicts as the place which refused to participate in the massacre of St. Bartholomew. Pop. about 19,000.

BAYOU, probably a corruption of the French word *bayou*, a "gut" or "channel." Its strict signification is a stream which is not fed by springs, but flows from some other stream or from a lake; but it is not unfrequently used in America as synonymous with "creek." The term is very little employed except in the states of Louisiana, Texas, and Arkansas.

BAYOU SARA, a village of Louisiana, situated on the Mississippi river, 165 miles above New Orleans. It is a shipping point for the corn and cotton produced in the vicinity. A railroad connects it with Woodville, Mississippi.

BAYRHOFER, KARL THEODOR, leader of the Hesse-Cassel democrats, born in Marburg in 1812, studied law, but devoted himself subsequently to the study of philosophy, on which subject he began to lecture in 1834 in Marburg, where in 1838 he received the appointment of special and in 1845 of permanent professor at the university. He became favorably known to the literary world by his various philosophical writings, in which he advocated the views of Hegel, while at a later period, he joined more particularly that branch of the Hegelian school of philosophers, whose opinions are represented in the *Jahrbüchern für speculative Philosophie*, and in the *Jahrbüchern für Wissenschaft und Leben*. In the latter periodical, a series of papers appeared from him in 1849, under the name of *Untersuchungen über Wesen, Geschichte und Kritik der Religion*, in elucidation of his views of the *Marburger Lichtfreunde*, and of the other new religious organization which grew out of the modern German Catholic movement, in reference to which he published a variety of works and of which he is a prominent champion. When the revolution of 1848 broke out, he applied the principles of his philosophical and religious creed to the political world, and in the Hessian diet, of which he became a member, in November of the same year, the leadership of the democratic party devolved upon him. Afterward he was for some time president of the chamber and member of the committee of the states of Hesse-Cassel.

BAZA, a city of Spain, famous in the early history of Andalusia. The Spaniards captured it from the Moors in 1489, after a siege of nearly 7 months. In 1810, the Spanish forces under Blake and Freire were defeated here by the

French under Soult. Its ancient name was Basti. Pop. 10,133.

BAZAAR, an oriental assemblage of shops and traders. The bazaars are of 2 classes: the wide open places for the sale of animals, live and dead, and of bulky produce, which are usually in the outskirts of the town; and the covered bazaar, in which retail traders are congregated. The wholesale dealers do not keep their stock in the bazaar, although they may frequent it for the sake of meeting customers. The place is divided into streets or passages, which are usually restricted to the sale of one particular article, and this gives the appearance of great trade and promotes the convenience of customers. The shops are small, and the goods are displayed on a board or platform raised from the street, on which the dealer sits in tailor fashion, without any counter, and with his merchandise so arranged about him that he can conveniently reach it without rising. In front of the shop a small earthen or brick bench is sometimes placed, either for the display of wares or as a step for the customer to mount into the shop and take his seat by the side of the dealer. The bazaar is under charge of watchmen, and thefts and robberies are rare, although the shops are not closed at night. A crier is attached to the bazaar, who proclaims the merits of a particular commodity and invites attention to it, or gives notice of articles lost and found. The price of an unusually valuable commodity is sometimes settled by a contest of leading dealers. The bazaar serves not only for the disposal of merchandise, but it is the focus to which the news tends, and where it is discussed with more license of speech than in other places. The confidential servants of the principal people meet at the bazaar during all hours of the day, and this of course insures a free circulation of rumors as to their masters' personal and public movements. The eastern ladies are debarred the luxury of shopping; their great opportunity of out-door recreation being their visit to the bath, but their productions, in the shape of embroidery and needlework, are sometimes sent to the bazaar for the sake of increasing their small pittance of pocket money. The perfect pictures of oriental life contained in the Arabian Nights give accurate impressions of bazaar life, even as it is seen our day.

BAZAINE, FRANÇOIS ACHILLE, a French general, born about 1810. He received his education at the polytechnic school at Paris and after having, in 1831, volunteered into military service, he was next year attached to the French army in Africa. He took part in the battle of Macta, and subsequently served with distinction in the Catalonian campaign in Spain. In 1840, returning to Africa, he joined the different military expeditions in which the war in that country gave rise to; after managing for some time the affairs of the subdivision of Tlemcen and playing a part in the surrender of Abd el Kader and the peace of 1847.

giers, he gradually rose in his profession, until, in 1850, he had attained the rank of lieutenant colonel. In the following year he was put at the head of the first regiment of the foreign legion, and when the Crimean war broke out, the 2 regiments of that legion were formed into a brigade, of which he was appointed commander. At the head of this force he arrived before Sevastopol in Oct. 1855, the very day on which the bombardment commenced. The ability which he displayed on that memorable occasion led to his being appointed as governor of Sevastopol immediately after the fall of the town, and soon afterward he was raised to the rank of general of division. Subsequently he distinguished himself in the expedition, the result of which was the capture of Kinburn.

BAZANCOURT, JEAN BAPTISTE MARIN ANTOINE LEOAT DE, a French general, born at Val-de-Molle (Oise), March 19, 1767, died January 17, 1830; took an active part in the Italian campaigns; distinguished himself and was wounded at the siege of St. Jean d'Acre; fought in the battle of Austerlitz, and was a member of the court-martial which, on March 21, 1804, pronounced the sentence of death upon the duke d'Enghien. In 1806 he was appointed commander of the legion of honor, and in 1808 promoted to the rank of brigadier general, while in the same year he was created baron of the empire, and went as commander to Hamburg with a mission connected with the continental blockade. He withdrew from service in 1816.

BAZAR-KHAN, a town of Asia Minor, in the pashalic of Anatolia. It is the great mart for all the villages in its vicinity, and thence derives its name.

BAZARD, AMAND, the founder of carbonarism in France, and one of the first promoters of St. Simonism, born Sept. 19, 1791, at Paris, died at Courtry, July 29, 1832. He first distinguished himself as a member of the national guard in the defence of Paris in 1815; and soon after the restoration secretly but actively engaged in politics. In 1818 he became the principal editor of *L'Aristarque*, an opposition paper; and when, on the assassination of the duke of Berry, the freedom of the press was restricted, he published many pamphlets to diffuse liberal opinions among the people. At the same time, he founded the lodge of *les amis de la vérité*, pursuing his political purposes under the cover of freemasonry; a little later, aided by some friends, he organized carbonari societies which soon numbered more than 200,000 members. He took part in the many conspiracies which tended to the overthrow of the Bourbon monarchy. On the discovery of the Bérfort military plot, he was outlawed, but succeeded in escaping. He afterward became one of the first disciples of St. Simon, and in 1825, one of the contributors to the *Producteur*. He soon gained an ascendancy among his new associates by his experience and comprehensive mind. In 1828, when the St. Simonians commenced expounding their doctrines in public meetings,

Bazard was, with Enfantin, the acknowledged head of the new school; he was conspicuous among the speakers and debaters, and greatly contributed, especially after the revolution of July, 1830, to give credit and popularity to the doctrines, which were, by his advice, strictly confined within the limits of philosophical theory. But this restriction was far from agreeable to the more ardent members of the party; and St. Simon's economical doctrine was converted into a religious creed, which rejected the ties of marriage. This was too much for Bazard, who was a married man and desired a social reform, but not the destruction of morality. Consequently, a schism broke out in 1831, and Bazard published a manifesto in which he charged Enfantin and his followers with planning a new social order founded upon corruption, licentiousness, and bad faith. He at the same time proclaimed himself chief of the new St. Simonian hierarchy; but this appeal was not heeded, the great majority of the St. Simonians faithfully adhering to his former colleague, as the true leader of the new church. Being thus forsaken and deeply aggrieved at the bitter debates which had taken place in private interviews with his former friends, Bazard became disheartened, sunk under the burden, and died; leaving a name honored even by those whom his conscience had constrained him to desert.

BAZAS, a town of France, department of Gironde, 83 miles S. S. E. of Bordeaux. It is very ancient, having been the chief town of the *Vasates*, one of the most powerful Gallic tribes in Novempopulania. It gave birth to the Latin poet, Ausonius; was also, for a lengthened period, the residence of the dukes of Gascony, and the seat of a bishopric. The ancient cathedral, now the parish church, is a remarkable monument of Gothic architecture. From its name, the surrounding district was called Bazadois. Bazas is now an ill-built place, with an imperial saltpetre manufactory, glass-works, and manufactories of druggut. Pop. 4,515.

BAZEGURS, a sort of gypsy tribe in Hindostan. They wander about the peninsula, trading in trinkets, performing tricks of jugglery and agility, and sometimes curing the sick by secret medicines. They are Mohammedans by profession, but their worship seems entirely peculiar and irregular.

BAZHENOFF, VASSILI IVANOVITCH, a Russian architect and first vice-president of the academy of fine arts at St. Petersburg, born at Moscow, March, 1787, died at St. Petersburg, Aug. 2, 1799. He studied at the architectural school and university of his native city, and subsequently at the academy of fine arts at St. Petersburg, and under Duval, at Paris, where he received a diploma of merit, which, as the honor had never before been conferred upon any Russian artist, induced the St. Petersburg academy to promote him to the rank of adjunct, and to send him to Rome. On his return home in 1765, he was employed by Catharine in rebuilding the Kremlin, but the project was

abandoned and never resumed, although the first stone was laid with great pomp on June 13, 1778. In 1776 he lost the favor of the empress, on account of the dissatisfaction which she felt with the summer palace at Tsaritsino, which he had begun for her. Paul, however, restored him to his position, and employed him to execute the palace at Gatchina, that of Paulowsky, and various other public works at Cronstadt. Bazhenoff was also, in conjunction with P. O. Voronikin, the reputed architect of the Kazan church in St. Petersburg. His most important work was the St. Michael palace, which he executed for Paul, and within the walls of which the emperor was assassinated. Kotzebue gives an interesting description of this sumptuous edifice, which has since been converted into a military academy.

BAZLEY, THOMAS, president of the Manchester chamber of commerce, born near Bolton, in Lancashire, in 1797. He was one of the earliest members of the Manchester anti-corn-law association and of the council of the league. His firm have established schools, lectures, and reading-rooms in connection with their factories. Mr. Bazley was one of the most active of the royal commissioners of the great exhibition of 1851. He was elected president of the Manchester chamber of commerce in 1845.

BDELLIUM, a gum-resin obtained from the *amyris commiphora* of India and Madagascar, and the Senegal variety from the *hendelotia Africana*. It is sometimes found mixed with gum-arabic and gum-senegal. The color of the roundish pieces and the lumps in which it comes is brownish red. The resin is inflammable, and diffuses a balsamic odor. It resembles myrrh in taste, smell, and medical properties; is sometimes, but rarely, used for plasters, and is also administered internally.

BEACH, the sandy or gravelly shore of the sea or of lakes. In Europe the term is applied only to the strip between the lowest and highest water; but in this country, where the feature of beaches is much more prominent, it designates the long sandy spits or tongues, which are common along our coast, parallel with the mainland, and separated from it by an inner harbor. They appear to have originated with the sediment deposited by some river or brook, which outside of its mouth has accumulated in the form of a bar. The waves and winds are constantly acting to change the form of these bars; but though their materials are ever shifting their position, the beach itself continues a marked feature in the topography of the coast. The most remarkable beaches in this country or in Europe, are probably the long line of them on the southern shore of Long island, known as the Great beach, and extending for more than a hundred miles in length. (These are alluded to in the article ALLUVIUM.) Smooth sand beaches, upon which the surf rolls in heavy breakers, are favorite places of resort in the summer season for bathing; and when the tide has left the sands saturated with water,

their surface, smooth as a floor, and so hard that the hoof of the horse hardly makes an impression upon it, presents an admirable drive. None finer could anywhere be found for three or four miles in length, than the Marshfield beach near the residence of the late Daniel Webster; but many others like it are met with on the coasts of New England. Nahant and Newport present with the smooth beaches the contrast of alternating cliffs of rock, adding much to the beauty of the coast and to the attractiveness of the locality to summer visitors. Further south, Long Branch of New Jersey, the beach of Cape May, of Old Point Comfort, Hampton beach, and that of Sullivan's island in Charleston harbor, are but a few of these interesting watering places, resorted to in the summer for their cool breezes and refreshing sea-bathing.—Raised beaches are ancient beaches now standing at higher levels than formerly, and making terraces inland. For description of these, and of the "Ridge Road," in New York, once a beach, see ALLUVIUM.

BEACH, MOSES YALE, an ingenious American mechanic, and former proprietor of the "New York Sun" newspaper, born at Wallingford, Conn., Jan. 7, 1800. In his boyhood he did duties about the house and farm, attended the village school, and showed unusual skill in mechanical contrivances. At the age of 14 he was bound as apprentice to a cabinet-maker at Hartford, and by diligence in performing extra tasks, he was able to purchase his freedom in his 18th year. After being employed for a time as journeyman in Northampton, Mass., he went into business, and the cabinet work prepared by his firm was reputed among the best in the country. Yet his business resulted unfortunately, and he removed to Springfield. There he neglected other interests in his zeal to manufacture a gunpowder engine for propelling balloons, which proved an abortive attempt, and in efforts for the steam navigation of the Connecticut river between Hartford and Springfield, which would have been successful had not the ruinous state of his affairs obliged him to cease operations while his steamer was on the stocks. Yet his plan was carried out by others, and it was due to his invention that a steamer was taken over what had before been deemed the insurmountable Enfield falls. Mr. Beach soon after devised a rag-cutting machine, by which immense labor is saved, and which has been generally adopted in paper-mills; but having revealed his idea before he obtained a patent, he derived no personal benefit from his invention. He next removed to Ulster county, N. Y., where he became concerned in an extensive paper-mill, and after having rapidly amassed property during 6 years, lost it all in the 7th. This was the last of his reverses. In 1835 he went with his family to the city of New York, where he became interested in the "Sun" newspaper, the pioneer of the penny press, of which he soon made himself sole proprietor; and the wealth which he has since acquired, has made him pros-

inent in banking and other financial concerns. During the Mexican war, he was sent to Mexico by President Polk as an agent to arrange a treaty of peace. The negotiations, however, when near to a satisfactory conclusion, were broken off by a false report that Santa Anna had annihilated the army of General Taylor in the north of Mexico. Mr. Beach has recently retired from business, and resides in his native town of Wallingford.

BEACHY HEAD, a lofty cliff in the British channel, on the coast of Sussex, between Brighton and Hastings. A light-house has been erected on it 285 feet above the sea.

BEACON, a conspicuous mark or signal either used to alarm the country in case of invasion, or as a guide to mariners. The alarm beacon was usually fire placed on the tops of high hills, the flames of which could be seen at a great distance by night, and the smoke by day. They were in great use for rousing the border on an invasion either by Scotch or English.

A sheet of flame from the turret high
Waved like a blood flag on the sky,
All glaring and uneven;
And soon a score of fires I ween
From height and hill and cliff were seen.

A beacon to mariners is either a landmark erected on an eminence near the shore, or a floating signal moored in shoal water.

BEACONSFIELD, a declining market town in Buckinghamshire, England, 24 miles W. by N. of London. It is situated on high ground, and its name is supposed to have originated from a beacon once set up there. The remains of Edmund Burke, who resided at Gregories in this parish, are deposited in the parish church; and the churchyard contains a monument in honor of the poet Waller, to whom the manor belonged, as it still does to his descendant. It has fairs of diminishing importance.

BEADLE (Sax. *bydel*, a crier), an English parochial authority, servant of the church wardens, who parades himself in cocked hat, knee breeches, rod of office, and gold lace, keeps order in the church and churchyard, and performs various minor services. Rural deans had formerly their beadles to summon the inferior clergy to visitations, and hence, probably, the present ecclesiastical aspect of the office. The beadles in the universities of Oxford and Cambridge bear maces before the chancellor or vice-chancellor in procession. In Oxford there are 8 esquire and 8 yeomen beadles, attached to the respective faculties. The esquire beadles at Cambridge collect fines and penalties, and summon the members of the senate to the chancellor's court.

BEADS, in the Roman Catholic church, a chaplet used in saying the rosary, a series of prayers to the Blessed Virgin. This chaplet consists of 165 beads, 15 of which are larger than the rest, and being strung at equal distances, divide the remaining 150 into 15 decades. The apostles' creed is recited at the commencement of the rosary; the Lord's prayer is said at every large bead, the *Ave Maria* at

every small one, and the doxology at the end of every decade; while during the recital of each of the 15 divisions, the mind is directed to some prominent event in the history of the Savior or the Blessed Virgin, such as the annunciation, nativity, crucifixion, resurrection, assumption, &c. A smaller chaplet, $\frac{1}{4}$ the length of that above described, but like it in other respects, is in more general use. The beads are made of various materials, such as wood, glass, ivory, bone, cocoa-nut shell, and sometimes of gold, silver, or precious stones. The devotion of the rosary is said to have been introduced by St. Dominic in the 13th century, but the Benedictines, as early as the 6th century, appear to have employed a string of beads upon which they said certain prayers while at work. The festival of the rosary, instituted by Pope Gregory XIII., in 1573, to commemorate the victory of Lepanto, is celebrated throughout the Catholic church on the 1st Sunday of October.—The worshippers of the grand lama in Asia make use of a kind of chaplet, and the Mohammedans have their beads of holy earth from Mecca or Medina, which they pass through their fingers while reciting the 99 qualities of God mentioned in the first part of the Koran.

BEAGLE (*canis sagax*), a hound of the smallest size, formerly used for hunting hares, but now kept solely for the purpose of rabbit shooting. In old times, when a fox-hunt lasted from morning to night, and the excellence of the run was reckoned by the number of hours consumed in it, provided that there was a kill at the end, hare hunting with beagles was considered a fine sport. It was an especial favorite with young people, who could readily keep up with the diminutive pack on their ponies, which, indeed, it was no difficult matter for an active pedestrian to do, with no aid beyond his own limbs. At this time, from 10 to 12 inches was the legitimate height of a beagle, the nearer to the smaller standard the better; and the perfection of a pack was to be exactly matched in size, and so nearly matched in speed that, while running in full cry, a sheet would cover the whole, without a single straggler. The true beagle was of the exact type of the great southern hound, slow but of the most exquisite powers of scent, of which Shakespeare wrote the most perfect description that exists—

My hounds are bred out of the Spartan breed,
So flewed, so sanded, and their heads are hung
With ears that sweep away the morning dew.
Crook-kneed and dew-lapped like Thessalian bulls,
Slow in pursuit, yet matched in tone, like bells,
Each under each, &c.,

all of which points refer exactly to the tiny beagle. Their color is usually black, white, and tan pied, and sometimes blue-mottled, which, for the hare-hunting beagles, was held the choicest. Since they have been used for rabbit-shooting, their size is still further reduced, and in their coloring, pure white, or white with black and tan ears and eye-patches, has, if any thing, the preference. Modern rabbit-

shooting over beagles is thus described by "Oraven," a distinguished sporting writer of the new school: "The best sample of it we ever enjoyed was in the woods of the earl of Winterton, adjoining his seat, Shillinglee park, in Sussex. This nobleman keeps the most perfect pack of rabbit beagles, probably, in existence, and goes out with them, quite *en prince*. Having caused the covers he purposes shooting to be stopped—after the fashion of fox-hunting"—that is to say, having the mouths of the burrows filled with fagots, to prevent the game from running to ground—"he sallies forth with his Liliputian pack, cheers them into cover, turns them with his horn, and, in short, carries on his rabbiting with all the pomp and circumstance of perfect woodcraft. His hounds are about the size of well-grown kittens, and as full of fire as Lucifer matches. Their cry is as 'tunable as the lark,' and quite as shrill, being the completest canine counter-tenor that may be conceived. This is shooting the rabbit in such a style as ought to reconcile the defunct to its fate; but it is not everywhere that the cony is demolished as at Shillinglee." Certainly, it may be added, nowhere in the United States; but, in countries where they greatly abound, it is very pretty sport to shoot the little American hares over beagles, if only a couple or two in number, and of larger size, and less perfect qualities, than those described above. The burrowing rabbit of Europe is not known on the American continent; but the small hare, usually misnamed the rabbit, affords

better sport, as he is wilder, runs faster, and never takes to earth. Considering the abundance of this little animal in many regions, it is a matter of some surprise that the beagle has not been more largely cultivated in America, one of the true breed being very rare.

BEAK, in ancient galleys, a beam fortified with sharp and pointed irons, and fastened to the prow, for the purpose of piercing other vessels. Beaks were often made to resemble the heads of savage animals, and were sometimes attached so low as to be beneath water, and thus being invisible to be more dangerous. They are said to have been invented by the Tyrrhenian Pissus. The beak head in modern ships is that part before the fore-castle, which is fastened to the stem and supported by the main knee.

BEALE, MARY, an English artist, born in 1682, at Suffolk, England, died Dec. 28, 1697. She became noted as a portrait-painter in 1672, for the beauty of her coloring, which she had attained by copying the paintings of Correggio, Vandyke, and others. She studied with Sir Peter Lely, and painted the portraits of the bishop of Ochester, Tillotson, Stillingfleet, and other distinguished persons of the day. Her pictures were very popular, and are said to have possessed great merit. She also painted in water-colors and crayons. Her husband was a painter and color-maker, but had no reputation as an artist. Mrs. Beale was well educated, and wrote some poetical pieces; she was much respected by all her contemporaries.

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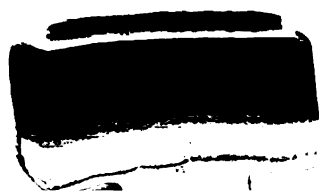


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